THE RAILWAY GAZETTE

A Journal of Management, Engineering and Operation

INCORPORATING

Railway Engineer · TRANSPORT · The Railway News

The Railway Times · Herapath's Railway Journal · RAILWAY RECORD.

RAILWAYS ILLUSTRATED · ESTABLISHED 1835 · Railway Official Gazette

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1.

Telephone : WHItehall 9233 (12 lines). *Telegrams : "Trazette Parl, London"*

BRANCH OFFICES

GLASGOW: 87, Union Street . . . . . *Central 4646*
NEWCASTLE-ON-TYNE: 21, Mosley Street . . *Newcastle-on-Tyne 22239*
MANCHESTER: Century House, St. Peter's Square . . . *Central 3101*
BIRMINGHAM: 90, Hagley Road, Edgbaston . . . . *Edgbaston 2466*
LEEDS: 70 Albion Street . . . . . *Leeds 27174*
BRISTOL: 8, Upper Berkeley Place, Clifton . . . . *Bristol 21930*

Annually £4 10s. by post. Single copies, Two shillings.

Registered at the G.P.O. as a newspaper. Entered as second-class matter in U.S.A.

Editor : B. W. C. Cooke, Assoc. Inst. T.

Vol. 100] FRIDAY, JUNE 11, 1954 [No. 24

CONTENTS

	PAGE
Editorial Notes	649
Lodging Turns	651
The New Tunnel under the Pennines	651
British Transport Commission Traffic Receipts	652
Progress under the Indian Five-Year Plan	653
Congress Discussions on Electric Traction	653
South Australian Railways in 1952-53	654
Letters to the Editor	654
The Scrap Heap	655
Overseas Railway Affairs	656
Publications Received	657
Seat Reservation Systems	658
Electric Traction Section	660
British Railways Class "8" Locomotive	663
Personal	667
News Articles	669
Contracts and Tenders	673
Notes and News	674
Railway Stock Market	676

The Queen's Birthday Honours List

THE Birthday Honours are in accordance with the trend of recent years in including few names of railwaymen or of those connected with railways in this country. Outstanding in the selection of names received as we went to press, and a recognition of his work of railway development in Rhodesia, is the K.B.E. conferred on Sir Arthur Griffin, who retired recently as Chairman, Rhodesia Railways, after over 40 years' railway service in India and Rhodesia, in both of which countries he achieved high distinction; in India he was General Manager of the North Western Railway, and later Chief Commissioner of Railways and a Member of the Viceroy's Executive Council, and he was General Manager & Resident Director of the Rhodesia Railways from 1947 until his appointment in 1953 to the Chairmanship from which he recently resigned. In Northern Ireland, where so much has been done by the Ulster Transport Authority to improve and develop transport in the Six Counties, and to co-operate with the transport undertakings in the Republic of Ireland, Mr. J. Sydney Rogers, Vice-Chairman of the U.T.A., receives the C.B.E. The same honour is conferred on Mr. F. J. Colvill, Engineer-Surveyor-in-Chief, Ministry of Transport & Civil Aviation. Among those prominent in transport undertakings associated with the railways, Colonel J. G. B. Beazley, Chairman of the Mersey Docks & Harbour Board, receives the honour of knight bachelor. In the industries supplying railway materials, Mr. I. A. R. Stedeford, Chairman & Managing Director of Tube Investments Limited, receives the K.B.E.; and Mr. R. R. Costain, Chairman & Joint Managing Director of Richard Costain Limited, contractors, becomes a knight bachelor.

Towards Unification in Ulster

A SIGNIFICANT step towards the unification of the services of the Ulster Transport Authority and the Great Northern Railway Board has been taken with the appointment, announced in our Personal columns this week, of Mr. H. S. Knott to succeed Mr. J. W. Hutton, Chief Traffic Manager of the U.T.A., who retires this year. Mr. Knott has been Traffic Manager of the Great Northern Railway since 1944, and will thus become Traffic Manager of the two undertakings. In the Act which brought the Great Northern Railway Board into being last year, the Board is empowered to conclude agreements with the U.T.A. for co-ordinating services, and both systems have been closely examining means of ending competition between them. Mr. Knott is chairman of the joint technical committee which has been studying all aspects of the problem and is about to make its report. One of the most contentious questions is the duplication in part of Northern Ireland where the Authority operates both rail and road services in competition with the trains of the G.N.R., which earlier legislation deprived of its own bus services north of the border. Such duplication cannot be afforded in so small a community as the Six Counties.

Need for the Rhodesian South-East Connection

THE reasons which determined the Rhodesia Railways to build a 200-mile line to the Mozambique border as part of a new direct route to the port of Lourenço Marques were stated by Sir Arthur Griffin in an address given before his retirement as Chairman of the Rhodesia Railways Board. Analyses showed that the Salisbury-Umtali-Beira route would be overloaded within a few years, and the Mafeking route, with its limited capacity, entails a long haul to and from either Lourenço Marques or any South African port. Improvement of the capacity of these two outlets was therefore rejected in favour of either bridging the gap between the Rhodesia Railways at West Nicholson and the South African Railways at Beitbridge or seeking a fresh outlet. The second course prevailed, as, unlike the existing S.A.R. line from Beitbridge towards Lourenço Marques, a new line running thither from Bannockburn, on the Shabani branch, to join an extension of the Mozambique system could be laid out as a fast, high-capacity route. Moreover, considerations of rating and revenue favoured its choice, for a Beitbridge-West Nicholson link, attractive as it may seem at first sight, would abstract traffic from the south now passing over the Mafeking-Bulawayo line, with consequent loss of revenue to the Rhodesia Railways because of the shorter haul in Rhodesian territory.

Hunt for New Traffic

THE first of the new multiple-unit sets to be built under the £2,000,000 programme of British Railways for using lightweight diesel trains in six selected areas will go into service in the West Riding next Monday with the introduction of the summer timetable. More will subsequently be delivered for service in West Cumberland, Lincolnshire, East Anglia, the North-East, and Central Scotland. In the June issue of *British Railways Magazine*, the Man on the Line likens the two-tone horn of the

new trains to a hunting call, symbolising British Railways' latest drive to "beat the coverts" of potential passenger traffic on all its services. The hunt, he says, is for more business and greater efficiency, and all departments are in it. Transport has become more competitive as a result of the 1953 Act, but the new diesels, the best summer schedule since the war, and the many other improvements of recent years provide an opportunity which should be grasped with vigour and optimism.

Overseas Railway Traffics

THE diminishing volume of traffic moved by the railways is again reflected in the monthly report of the Canadian National Railways results for April, and in the aggregate figures for the first four months of the year as compared with those of 1953. In April, gross operating revenues for the entire system amounted to $51,962,000, a decrease of $7,824,000 compared with the corresponding month last year. Operating expenses totalled $51,296,000; for the same month a year ago they were $55,136,000. Aggregate figures for the first four months of 1954 compared with last year show a drop in gross revenues of $19,927,000 and in operating expenses of $15,590,000. The result is a decrease in net revenues of $4,337,000 compared with 1953. Canadian Pacific gross earnings for April were $35,427,086 compared with $39,659,128 for April, 1953, and working expenses were $33,415,296 ($37,563,000), so that net earnings amounted to $2,011,790 ($2,096,068). Aggregate gross earnings for the first four months of the year were $134,746,126 ($149,430,316), and aggregate net earnings $4,810,399 ($6,495,980).

Canadian Railways Reject Overtime Increases

THE Canadian Pacific Railway and Canadian National Railways have informed the Canadian Federal Department of Labor that because of a continuing decline in their traffic and earnings they are unable to grant any of the requests of their non-operating employees for additional overtime and other payments. In a letter to Mr. M. M. Maclean, Director of Industrial Relations, Ottawa, both railways report a drop of more than $32,000,000 in their combined gross revenues for the first four months of 1954 and add that the trend of both wagon loadings and earnings is continuing to worsen. They cite these and other figures as evidence that they have even more justification now than some months ago for declining all requests, the granting of which would increase their costs of operation. The number of revenue freight wagon loads handled by the two railways to the end of March this year was down 8·8 per cent. In April the loadings were 11·1 per cent lower than in April, 1953. In an attempt to meet the decline in traffic, the railways have had to make drastic reductions in expenses, resulting in the laying-off of many employees, and in the undertaking only of such maintenance work as required for pressing repairs and safe operations.

Quiet Luxury

BESIDES the luxury of the British-built stock and the good catering in the South African Railways "Blue Train" between Cape Town and Johannesburg and Pretoria, its restfulness appeals to the travelling public. There is no wireless, and most travellers enjoy the temporary retreat for 24 hrs. or so from the noise of everyday life. It was suggested not long ago in the Union Parliament, that the "Blue Train" in its present form should be replaced by something more up-to-date, including, apparently, radio news and music programmes, as in some luxury trains in U.S.A. Commenting on this, the *South African Railway News* suggests that the case for such services has by no means been established, and hopes that the S.A.R. & H. administration will not be accused of complacency if it leaves the "Blue Train" as travellers want it. There is much to be said for quiet luxury, without noisy distractions, in long-distance trains, which is in accordance with the general tradition of railway travel in other parts of the British Commonwealth besides South Africa. For the longer distances travellers in a hurry can go by air. The fact that many people prefer the comfortable train journeys says much for the rolling stock, track, and other arrangements of long-distance trains in the different countries. Quiet running is achieved, incidentally, by the "Blue Train" in one of the fastest long-distance journeys in the world on the 3-ft. 6-in. gauge.

Mechanical Handling Exhibition

THE fourth Mechanical Handling Exhibition & Convention, opened last Wednesday at Olympia, London, by Mr. Duncan Sandys, Minister of Supply, and to remain open until June 19, includes the most recent designs of equipment, much of which will be on view for the first time. The subject of mechanical handling is of the greatest interest, both to consignors by rail and to the railways handling the goods consigned. Besides the static equipment displayed, much of the machinery will be demonstrated, among it hydraulic lorry loaders, an automatic packing machine which straps and secures packages of irregular shapes, mobile cranes with jibs of 100 ft. ceiling, fork-lift trucks, and mechanical appliances of a similar nature. It has been estimated by the organisers of the Exhibition that the value of output of British-made mechanical handling equipment during last year reached £60,000,000, and of this more than 25 per cent was exported. Altogether there are some 200 exhibitors. The larger installations are being demonstrated by working models.

Reservation of Seats

A SURVEY elsewhere in this issue of seat reservation practice on some of the world's major railways emphasises the difficulty of reserving seats for passengers joining trains at intermediate stations. The system in force in New Zealand since 1929 is said to overcome this problem, but passenger traffic there is less dense than in most European countries. In the U.S.A. there is a trend towards mechanisation; but as far as Europe is concerned, developments in France since the war seem to be greater than elsewhere. The French National Railways have set up several centres designed to meet the peak-period needs of passengers in areas where traffic is evenly spread over a number of adjoining stations. The flexibility of the arrangements enables local requirements to be met at minimum cost. A chain of reservation centres on the French pattern, linked by efficient communications, would seem to provide a possible answer to the problem of intermediate reservations; whether or not this can be justified commercially must clearly depend on traffic and other conditions in the country concerned.

British Railways Prototype Class "8" Locomotive

BY a happy coincidence British Railways completed the building of the three-cylinder prototype locomotive class "8" at Crewe Works, to enable the engine to be included in the exhibition of railway equipment inspected at Willesden Motive Power Depot by delegates to the Sixteenth International Railway Congress on May 25. The locomotive, No. 71000, fittingly named *Duke of Gloucester*, after the Honorary President of the Sixteenth International Railway Congress, is the largest passenger engine completed by British Railways since the development of the standard types. The tractive effort is 39,080 lb., and the weight in working order 156 tons 15 cwt. Steam distribution is by British-Caprotti valve gear in which separate inlet and exhaust poppet valves are actuated by rotary cams. This feature should increase the thermal and mechanical efficiencies of the locomotive by improved distribution of steam to the cylinders in comparison with that obtained by piston valves. A feature not previously associated with British Railways locomotive design is the method of taking up big-end wear on the inside cylinder connecting rod. This is done by a serrated cotter the serrations of which mesh with

those in an inside piece at the back of the bearing. The locomotive is described and illustrated on another page of this issue.

Lodging Turns

THE footplate staffs from the eight depots in the Western Region who had been on unofficial strike in protest against proposed new lodging turns, resumed normal working a fortnight ago after the annual conference of the union embracing a proportion of their number, the Associated Society of Locomotive Engineers & Firemen, had passed a resolution calling on the Society's executive committee to negotiate with the British Transport Commission for the total abolition of lodging turns. Similarly, the decision, at that time, of enginemen in the North Eastern Region not to strike is reported to have been influenced by the A.S.L.E.F. resolution. The A.S.L.E.F. executive has now decided to approach the Commission with a view to abolition of all turns. This shows that although neither that union nor the National Union of Railwaymen, many of whose members were involved, countenanced the unofficial strike, the unreasonable opposition to lodging turns persists among an element of footplate staff. It would, however, be unwise to exaggerate the extent of the opposition, for lodging turns are accepted by a very considerable element among footplate staff, including many who themselves are rostered to work them, as the necessity they are.

The necessity for lodging turns and their relatively infrequent incidence among footplate men might have been expected to weigh with the objectors, who are surely experienced enough in railway work to need no reminder of the facts. There are many instances where the outward trips have to be kept uneconomically short if the men are to work another train home within the time required, while to bring men home as passengers wastes both money and manpower. The stopping of long-distance trains intermediately for the sole purpose of changing enginemen slows down traffic, wastes line capacity, and because of the margins necessary to prevent trains being held up waiting for a relief crew, also wastes manpower. With long-distance passenger trains fully loaded with through passengers, the convenience and comfort of the public may be affected by the unnecessary congestion caused in trains that would not otherwise stop. The same principle also applies to the rostering of guards.

The principle of lodging turns was confirmed by the National Agreement of 1919 with the unions, and before the outbreak of war in 1939 the system was in widespread use. As a temporary wartime expedient, however, the former railway companies greatly reduced the number of lodging turns, according to the circumstances of each route, so as to spare men the anxiety of being away from home during enemy air raids, and because of prevailing difficulties in feeding and private lodging arrangements. With the return of more normal conditions, and with the extensive provision of railway hostels, the railway companies, and latterly the British Transport Commission have sought to restore lodging turns where necessary so as to help restore more efficient and economical working; the latter aspect is particularly important in view of the higher costs of labour and materials, and the shorter working week introduced in 1947.

In broad terms, the present agreement with the unions provides that men will not be involved in lodging turns of duty requiring them to lodge within 75 miles of their home depot. Lodging turns on freight trains are restricted to trains of a certain classification, which means that some of the slower moving freight trains are excluded from such workings. As far as possible lodging is in railway hostels, otherwise alternative approved lodging arrangements are made. No new lodging turns are introduced until both the N.U.R. and the A.S.L.E.F. have satisfied themselves that the workings conform in all respects to the principles of the National Agreements and the understandings reached. No separate agreements are made with branches of the unions by the Regions of British Railways, but before any additional lodging turns are introduced details are given to the respective Local Departmental Committees under the consultation procedure.

An essential principle is that the men should be away from home as short a time as practicable consistent with proper rest at the "away" terminal. By agreement with the men, lodging turns are confined to specified engine links. Besides the mileage rates, men on lodging turns receive the special lodging allowance to cover cost of hostel accommodation and meals, which is based on length of time away from the home depot, with a minimum of 6s., whereas the normal charge in railway hostels is 1s. per bed and about 1s. for each main meal.

There are 83 staff hostels in operation on British Railways. Since the war new hostels have been provided at, among other places, Southall, Old Oak Common, Banbury, Wolverhampton, Scunthorpe, and Peterborough. In the three years 1951-53, out of a total of £4,480,697 authorised for improved staff welfare amenities, £470,000 was earmarked for building of new and improvements to existing hostels, many of which are used by train crews on lodging turns.

The low incidence of lodging turns is shown by figures for a representative period, the week ended February 21, 1953, when for the whole of British Railways there were 3,070 lodging out of a total of 371,761 turns worked, or 0·83 per cent. The statement by the Western Region during the recent dispute points out that in that Region, at the Old Oak Common Depot, only two links out of 23 include lodging turns. The frequency with which the men of these two links have to lodge is, in one case, 12 instances per man in the course of 24 weeks, and in the other case 21 in 24 weeks. The incidence of lodging varies at the different depots according to circumstances, but it would be reasonable to assess the average frequency of lodging turns as being around one in 10. Footplate staff, the statement points out, do not necessarily continue indefinitely on turns of duty which involve lodging away from home.

In the circumstances the opposition to measures which do so much to improve railway efficiency whilst causing comparatively little hardship to such a small proportion of railwaymen has no reasonable basis. In any case, the very nature of railway work implies journeys away from home; and one of the remarkable features of lodging turns as now rostered is the fact that their incidence is as low as it is. The pay increase awarded at the turn of the year was conditional on the British Transport Commission and the trade unions conferring to evolve ways of increasing the efficiency of the railway organisation by all appropriate means. Such discussions are in progress, and it is inevitable that lodging turns should be considered at some stage as an important factor in increasing efficiency.

The New Tunnel under the Pennines

THE ceremony at Woodhead last week, when, as reported on another page, Mr. Alan Lennox-Boyd, Minister of Transport & Civil Aviation, declared open the new three-mile tunnel under the Pennines, marked the completion of one of the most important and monumental railway works of the century. The cost has been over £4,000,000, but, as the Minister observed, the money has been well spent, for working will be transformed on the busy Manchester-Sheffield line with its heavy freight traffic when both the tunnel and electric haulage through it between Manchester and Penistone are brought into service next Monday.

The workmen engaged on the new tunnel have been provided with all the amenities of a modern camp, with cinema, canteens, and other amenities unknown to the navvies who built the original tunnels a century ago. This is not, however, to belittle their achievement, for even with all modern aids at their disposal much still depends on the exertions of the work-

men, and the fact that in spite of all precautions and an excellent health service five men lost their lives and that there were at least two bad rock falls should dispel any thought that modern tunnelling has been divested of all hazards.

The difficulties of the work are made clear in the paper, discussed editorially in our April 16 issue, which was given to the Institution of Civil Engineers by Mr. Peter Scott, of Sir William Halcrow & Partners, the consulting engineers, and Mr. J. I. Campbell, who as Civil Engineer, British Railways, Eastern Region, and before that, Civil Engineer of the London & North Eastern Railway, has seen this great project through from start to finish.

For many years the original "fearful and noisome" single-bore tunnels, the first finished in 1845 and the second in 1852, have been notorious among enginemen for their bad ventilation in spite of remedial measures. To the difficulties of ventilation were later added deterioration of the fabric, which made maintenance difficult and expensive. In addition the tunnels had insufficient headroom to accommodate the overhead equipment for the Manchester-Sheffield-Wath electrification authorised and begun before 1939. There was thus ample justification for the weighty decision taken by the L.N.E.R. in 1948 to embark on the great work of driving a new double-track tunnel to supersede the old twin tunnels.

In an official booklet entitled "The Third Woodhead Tunnel," Mr. George Dow, Public Relations & Publicity Officer, London Midland Region, has ably summarised the story of the old tunnels and the building of their successor. Woodhead now comes third among British tunnels, for the new bore is 3 miles 66 yd. long, 44 yd. longer than the old tunnels but 884 yd. shorter than Totley, which pierces the Pennines some 17 miles to the south on the former Midland route between Manchester and Sheffield and dates only from 1894. On Monday the old tunnels will be abandoned though it is to be hoped that their fine castellated portals will be preserved, particularly as the alignment of the approaches has made it necessary, as at Dunford Bridge, to build a new station at Woodhead, and so demolish the castellated building which harmonised so well with the tunnel mouth and with the severity of the Pennine landscape. The portals of the new tunnel are no less fine in their plainer style, their clean new stone setting off the smooth concrete-lined interior which smoke will never blacken. British Railways may be proud of having carried out a work which will long stand as a noble example of twentieth-century civil engineering reflecting the highest credit on its designers and builders.

British Transport Commission Traffic Receipts

PASSENGER receipts for British Railways in Period 5, the four weeks ended May 23, were only £10,000 more than in the corresponding period last year and were £1,282,000 less than in Period 4. A seasonal drop is to be expected after Easter, since many private cars come on to the roads then for the summer and coach services generally commence more intensive working, and last year the drop was £896,000 in the corresponding period. This year's figure suggests either that the total passenger traffic offering has dropped rather more than it did in 1953 or that there has been a greater diversion of passengers to other means of transport. The figures for merchandise and livestock are also disappointing at £317,000 more than the 1953 figures. In Period 3 there was an increase of £536,000 and in Period 4 of £550,000. The new figure is thus a reversal of the expected trend, but this is to some extent offset by the rise in mineral traffic, which showed a gain of £113,000 over the previous year. Coal and coke traffic showed an increase of £453,000 on the corresponding period of last year and at a total of £9,244,000 for the four weeks is at the level which might have been expected.

Receipts for parcels and so on by passenger train continue the encouraging trend noted in Period 4 and collection and delivery services again show a rise on the previous year. The total receipts from this source were £34,000 more than in Period 4 and equalled those for Period 3.

—	Four weeks to May 23		Incr. or decr.	Aggregate for 20 weeks		Incr. or decr.
	1954	1953		1954	1953	
	£000	£000	£000	£000	£000	£000
Passengers—						
British Railways ...	7,809	7,799	+ 10	37,627	36,450	+ 1,177
London Transport—						
Railways	1,434	1,370	+ 64	7,168	6,821	+ 347
Road Services ...	3,963	3,908	+ 55	19,126	18,258	+ 868
Provincial & Scottish Buses	3,672	3,601	+ 71	17,176	16,649	+ 527
Ships	342	306	+ 36	1,202	1,176	+ 26
Total Passengers ...	17,220	16,984	+ 236	82,299	79,354	+ 2 945
Freight, parcels & mails—						
British Railways—						
Merchandise and livestock	8,990	8,673	+ 317	43,807	42,495	+ 1,312
Minerals	3,651	3,538	+ 113	17,991	17,823	+ 168
Coal & Coke	9,244	8,791	+ 453	45,000	43,528	+ 1,472
Parcels, etc. by passenger train	3,215	3,053	+ 162	14,998	14,463	+ 535
Total British Railways	25,100	24,055	+ 1,045	121,796	118,309	+ 3,487
British Railways C. & D., etc.	984	929	+ 55	4,696	4,508	+ 188
Others*	6,624	6,777	— 153	32,026	32,201	— 175
Total freight, parcels and mails	32,708	31,761	+ 947	158,518	155,018	+ 3,500
TOTAL	49,928	48,745	+ 1,183	240,817	234,372	+ 6,445

* Inland waterways, freight haulage and ships.

London Transport railways again show an increase over the previous year, this time of £64,000. The increase over Period 4 is £19,000 compared with a rise of £29,000 between the corresponding periods in 1953. This may be due in part to the effect of cheap evening fares, which are still showing a loss. London Transport road services, while £55,000 above the 1953 figures and at £3,963,000 for the period showing a gain on the previous period, yet have slowed down the rate of increase. In Period 4, on smaller totals, the gain was £238,000 on the previous year, and in Period 3 it was £174,000. A similar trend is apparent with the receipts from provincial and Scottish buses where last year's increase from Period 4 to Period 5 is not paralleled, there being instead a decline of £46,000.

A reverse trend is apparent for passenger shipping receipts, where a fall last year is now countered by a continued increase. The actual gain on the corresponding period of last year is no less than £36,000 and this brings the aggregate for the year to an increase of £26,000 on last year. As anticipated in our review of the Period 4 receipts, all aggregate figures except those for inland waterways, freight haulage and ships, now show an increase over the 1953 figures. The effect of the road haulage sales is apparent in the figures for this category, grouped as "others," and although the receipts for Period 5 were, at £6,624,000, some £504,000 more than in Period 4, there was a decrease of £153,000 on the previous year and the aggregate for the year now shows a total deficit of £175,000.

PERCENTAGE VARIATION 1954, COMPARED WITH 1953

	Four weeks to May 23	20 weeks to May 23
British Railways—		
Passengers	+ 0·1	+ 3·2
Parcels	+ 5·3	+ 3·7
Merchandise & livestock	+ 3·6	+ 3·0
Minerals	+ 3·1	+ 0·9
Coal & coke	+ 5·1	+ 3·3
Total	+ 3·3	+ 2·9
C. & D. Services	+ 5·9	+ 4·1
Ships (passengers)...	+ 11·7	+ 2·2
British Road Services, Inland Waterways and Ships (cargo)	— 2·2	— 0·5
Road Passenger Transport, Provincial & Scottish ...	+ 1·9	+ 3·1
London Transport—		
Railways	+ 4·6	+ 5·0
Road Services	+ 1·4	+ 4·7
Total	+ 2·2	+ 4·8
Aggregate	+ 2·4	+ 2·7

Progress under the Indian Five-Year Plan

ON March 31, 1954, the first three years of the Indian 1951-56 Five-Year Plan were completed, and the Ministry of Railways of the Government of India has published a booklet outlining the progress of the plan as it affects Indian railways. The position at the end of the second year was broadly outlined in an editorial article on page 228 in our issue of August 28, 1953.

The principal aims of the railway sector of the plan are shown in the booklet to be: (*a*) the rehabilitation necessary to recover prewar standards of efficiency; (*b*) the removal of traffic bottle-necks and provision of additional facilities to meet new traffic arising from the implementation of the plan; and (*c*) improvement in the amenities available to the public and in the housing and welfare of the staff. As mentioned from time to time in these pages, normal expenditure—especially that needed for re-equipment—had been seriously curtailed first by the depression in the 1930s and then by serious shortages of materials during and after the war. Other handicaps were the surrender of 4,000 miles of branch lines to provide track for military purposes, and the adverse effects of Partition in 1947, in the form of wide re-orientation in the direction of flow of traffic and the complete loss of repair facilities in the Eastern Punjab and Assam areas.

To meet the abnormal increase in the volume of traffic, therefore, it was decided that the railways should be allotted a sum of Rs. 400 crores (£300 million) as their share of the funds available under the Five-Year Plan, Rs. 320 crores to be found from the railways' own revenues, and Rs. 80 crores from the Government central revenues; thus £48 million a year had to come from railway earnings. The main outline of the progress of the plan is set out in tabular form in the booklet, as follows:—

PROGRESS OF THE RAILWAY FIVE-YEAR PLAN

Figures in brackets are percentages, others are crores of rupees

Items of expenditure	Percentage of plan allocation	1st year 1951-52 (*actual*)	2nd year 1952-53 (*actual*)	3rd year 1953-54 (*revised estimate*)	4th year 1954-55 (*budget*)
Rolling stock & machinery	(52·2)	34·36 (48·4)	33·23 (55·2)	45·06 (57·8)	56·17 (59·1)
Track	(16·2)	9·72 (13·7)	13·46 (22·4)	11·30 (14·5)	12·38 (13·0)
Bridges	(1·4)	1·00 (1·4)	0·50 (0·8)	0·72 (0·9)	1·02 (1·1)
Other engineering works	(10·9·	6·68 (9·4)	7·24 (12·0)	10·44 (13·4)	13·42 (14·1)
Collieries & ports	(0·6)	0·16 (0·2)	0·10 (0·2)	0·62 (0·8)	0·94 (1·05)
Labour welfare and quarters	(6·0)	3·74 (5·2)	3·14 (5·2)	4·97 (6·4)	5·55 (5·8)
Restoration of dismantled lines	(1·4)	0·50 (0·7)	3·71 (6·2)	4·77 (6·1)	6·09 (6·4)
New lines & works	(7·1)	6·76 (9·6)			
Passenger amenities	(3·8)	2·45 (3·5)	2·34 (3·8)	2·99 (3·8)	2·85 (3·0)
Miscellaneous ...	(0·6)	5·49 (7·8)	—3·54 (—5·8)	—2·99 (—3·8)	—3·42 (—3·5)
Totals ...		70·86	60·18	77·88	*95·00

* Includes probable earnings

In 1955-56 a balance of Rs. 96·08 crores out of the Rs. 400 crores allotment will be available for distribution among the above items in the budget for that year.

"Locomotives and machinery" is by far the largest item and so calls for some examination. When the plan was instituted, 2,554 locomotives had already reached the end of their economic life. According to orders already placed under the plan in India and abroad, and including those under the Colombo Plan and the Indo-American Technical Corporation Agreement, 1,504 new engines will have been received when the five-year plan ends. In addition, 107 ordered prior to the plan will be available, or 1,611 in all, so that there will then be a balance of 943 locomotives in service but awaiting renewals. To this figure must be added 1,042 becoming over-aged during the period of the plan, making a total of 1,985 engines due for renewal on March 31, 1956, or 569 fewer than in 1951. It is expected that 8,800 engines will be required to move the traffic offering in 1956—as compared with 8,209 in service in 1951—so that a large number of over-aged locomotives will still have to be retained in service after 1956. The position with regard to coaching and goods stock is more favourable and the proportion of over-aged units that will have to continue running will be considerably lower.

Briefly, the financial situation under the plan is that, against the average annual investment of Rs. 80 crores, the first year's expenditure fell short by Rs. 10 crores, and the second year's by Rs. 20 crores, due mainly to the tardy receipt of rolling stock and to short supplies of steel, cement and other materials holding up works. The third year's figure, however, approximates to the allotment and it is expected that the fourth and fifth will be running at about Rs. 95 crores, or Rs. 15 crores in excess of the average allotment. If the present rate of supply of rolling stock and track materials is maintained, it is estimated that the full allotment of Rs. 400 crores will be absorbed, and that a sound foundation will be available for development under a second five-year plan.

Congress Discussions on Electric Traction

IT says much for the work of the reporters charged with investigating the merits of different electric traction systems that the summaries of their findings presented to the Sixteenth International Railway Congress in London last month were accepted with so little modification. The reports on this subject (Question 3) prepared by Mr. S. B. Warder, Chief Officer (Electrical Engineering), British Transport Commission, and Dr. Ing. C. Guzzanti, of the Italian Government General Inspectorate of Road Transport Services, were summarised in our issues of February 19 and April 16 respectively.

Mr. Warder, as Special Reporter, was responsible for collating the summaries which were discussed at the Congress meetings. He had pointed out in his original report that no one system of traction has advantages over all others in every case, and this was not disputed. It was further agreed that for all practical purposes the only systems suitable for extensive railway application are d.c. at 1,500 or 3,000 V., low-frequency a.c. at 11-16 kV., and a.c. of standard frequency at about 25 kV. The meeting recommended further study of existing power tariffs and of the possibility of more favourable rates being given to the railways, particularly in view of the fact that supply undertakings benefit by the consumption of large amounts of power at off-peak hours.

It was clearly too early for the Congress to establish precisely the place of the 50-cycle system in the future development of electric traction. While acknowledging the simplicity of its fixed installations, it was agreed that until further evidence is available it must be feared that this simplicity is accompanied by inconvenience due to unbalance of the power supply and certain restrictions on feeding sections of the railway in parallel. This matter had been discussed by Dr. Guzzanti, whose report pointed out that unbalancing may be more troublesome in areas where the railway load forms a large proportion of the total—in other words, in territories with small industrial development where the 50-cycle system is the only form of electric traction that can be justified economically. On the question of 50-cycle motive power, it was agreed that further operating experience is necessary before final judgment can be reached as to whether locomotives with a.c. motors or those embodying some form of current conversion have the best possibilities. Attention was drawn to the convenience of converter locomotives when it is necessary to provide for inter-running between lines electrified on different systems, but no preference was stated for conversion by rotary machines or rectifiers.

Agreement on the scope for multiple-unit trains in passenger service endorsed Mr. Warder's observations on this subject. There is a wide field here for development of rolling stock with satisfactory riding qualities at speeds of the order of 90 m.p.h., and of electrical equipments giving rapid acceleration and high maxima but at the same

time providing continuous running notches suitable for negotiating areas with dense traffic which may extend for considerable distances in the neighbourhood of large towns.

Discussion of comparative costs of different systems was made difficult by the widely varying conditions in the countries from which data had been received. It was claimed, however, that the 50-cycle Bo-Bo locomotives in France, the most powerful of their wheel arrangement on the Continent, cost less than corresponding machines for 16⅔ cycles. The importance of these discussions and the necessity for further study were emphasised on the first working day of the Congress, when Section 2, considering improvements in the efficiency of the steam locomotive, adopted the conclusion that steam traction is being progressively displaced by other types of traction, and little new steam locomotive construction is now envisaged.

South Australian Railways in 1952-53

THE report on the South Australian Railways for the year ended June 30, 1953, the last year of the late Mr. R. H. Chapman's administration, has been forwarded to us by Mr. J. A. Fargher, Acting Railways Commissioner. It shows an improvement in working results of £904,748 over those of the previous year, despite a reduced contribution by the State Government towards enhanced costs not covered by higher freight and passenger charges from £4,250,000 to £4,050,000. Increased rates and fares effective from January 1 and July 1, 1952, produced a £2,150,000 higher revenue than in 1951-52, and one that more than offset increases in wage rates, costs of materials, and other expenses, totalling £1,807,000.

The year's net surplus was £560,407 compared with a deficit of £144,341 in the previous year. Though better equipment, reduction in penalty payments, and other improvements in efficiency effected a saving of £350,000 compared with 1951-52, it continued necessary to rely on Treasury subsidies to balance railway accounts until charges were brought more into line with costs. Increased costs of wages and materials since 1938 had totalled £9,752,000, whereas the corresponding additional revenue from all increases in rates and fares to the year under review was only £4,560,000.

Some of the principal results for 1952-53 as compared with those for 1951-52 were:—

	1951-52	1952-53
	Thousands	
Total train-miles	6,944	7,199
Passenger journeys	18,269	17,565
Goods gross tonnage	4,376	4,568
	£ thousands	
Coaching receipts	1,656	1,786
Goods ,, ...	7,102	9,276
Total ,, ...	9,511	11,948
Total working expenses	13,305	14,796

Though passenger journeys were fewer than in the preceding year—due largely to the increased number of motor cars on the roads—the corresponding receipts increased due to the higher fares subsequent to July 1, 1952. Goods tonnage and receipts again increased but to a less extent than in 1951-52. Average earnings per ton-mile had increased by 96 per cent since 1946, though wages had risen by 174 per cent during the same period.

During 1952-53 six additional 1,750-h.p. 5 ft. 3 in. diesel-electric locomotives were placed in service, bringing the number running on June 30, 1953, up to nine; they were giving excellent service. Six more 5 ft. 3 in. gauge MacArthur locomotives were purchased from the Commonwealth Railways making the number in traffic nine. The first of 10 3 ft. 6 in. gauge engines on order from Beyer Peacock & Co. Ltd., was placed in service in June, and four Australian Standard Garratts of that gauge were purchased from the Western Australian Government Railways and repaired, and with the two already running were working on the Peterborough Division. Meanwhile, 14 broad-gauge railcars of a new type and 11 trailer coaches were under construction, and three existing railcars were fitted with diesel engines. Tenders were called for the supply of ten 750 h.p. diesel-electric broad-gauge locomotives. Also, 150 5 ft. 3 in. gauge and 106 3 ft. 6 in. gauge goods vehicles were received, and 490 broad-gauge were under construction.

The widening of the gauge from 3 ft. 6 in. to 5 ft. 3 in. between Naracoorte and Mount Gambier was opened for goods and livestock traffic in two sections, Naracoorte-Kalangadoo in October, 1952, and Kalangadoo-Mount Gambier in June, 1953. Earthwork was also begun for the gauge-conversion of the Mount Gambier-Millicent line. The doubling of the Goodwood-Edwardstown section was practically completed by the end of the year.

During 1952-53 Mr. F. H. Harrison, Chief Mechanical Engineer resigned, and Messrs. P. F. Cherry, Secretary; S. H. Watson, General Traffic Manager; E. J. Watson, Chief Engineer, retired from the service. They were succeeded, respectively, by Messrs. A. A. Pryce, C. H. Fidock F. B. Harvey, and J. D. Robert.

Letters to the Editor

(*The Editor is not responsible for opinions of correspondents*)

William Huskisson

June 5

SIR,—Your footnote to the quotation from *The Times* of May 27, 1854 (The Scrap Heap—June 4, 1954), refers to the statesman William Huskisson, killed in 1830 at the opening of the Liverpool & Manchester Railway.

This prompts me to ask why the sculptor of this gentleman's statue, which stands in the little-known Pimlico Gardens, Grosvenor Road, S.W.1, clothed him in a robe like a toga. Was there anything Caesar-like in his statesmanship or dealings with the railways of the time?

Yours faithfully,

HAROLD J. SMITH

135, Wellington Road North, Hounslow

[Huskisson is described by Mr. C. F. Dendy Marshall, historian of the Liverpool & Manchester Railway, as a good friend of the railway. At the time of his death at Rainhill he was M.P. for Liverpool; he had spoken in the House of Commons in favour of the L. & M. R. and had encouraged the directors to make fresh efforts on the failure of the first Bill in Parliament. It was the custom of the day for sculptors to depict statesmen in Roman dress.—ED., *R.G.*]

Road Vehicles and the Railways

June 5

SIR,—I have recently been covering about 500 miles a week by car. One fact has forcibly been drawn to my attention; there are far too many heavy vehicles on the road and, although drivers are usually courteous and considerate, the congestion is appalling. Many of these loads on lorries should be on the railways. The fact that they are not means, apparently, that the railways are inefficient, as their charges are too high and their services unreliable and unsatisfactory. If a lorry can take a load from A to B in two days, why should a similar load on the railways take five to ten? Presumably British Railways are aware of this state of affairs; but what are they doing about it?

Yours faithfully,

G. RICHARD PARKES

Montcroft, School Lane, Formby, Liverpool

[The fact that certain consignments and types of traffic are more suited to road than to rail transport does not imply that the railways are inefficient. More traffic is being conveyed today by the railways than before the war. A great deal is being done by British Railways to reduce transit times by rationalising services, by eliminating double handling, by introducing mechanical handling equipment, and by other means. Constant study is being given to railway rates, bearing in mind the statutory restrictions, to some extent relaxed under the Transport Act of 1953.—ED., *R.G.*]

THE SCRAP HEAP

Disillusioned

Leaving Euston for the North, I had a moment of wild optimism. Standing at the platform was a really magnificent picture-book train, gleaming with polish, windows sparkling, with an observation car at the back in which the glass was so clear that you could really see through it.

White-coated waiters were loading gallons of drink, blocks of ice, and every sort of luxury on to the restaurant car.

Only too soon we were disillusioned. The train was not being prepared for passengers of British Railways. The staff were getting it ready for members of the International Railway Congress. —*Gilbert Harding in "The People."*

Entraining a Derby Winner

Prospects for the 1896 Derby favourite, St. Frusquin, brightened agreeably when, setting off for Epsom, Persimmon defied all attempts to box him at Dullingham. Two horse-specials from Newmarket had to leave without the Prince of Wales's horse; the last was due to depart within 15 minutes. Still the perverse Persimmon refused to budge. As time ticked away a curious throng assembled—many, no doubt, with money staked on the horse, and as anxious as the Prince himself to see him Epsom-bound. At last, in desperation, Marsh called: "A sovereign to every man who helps get him in!" The reluctant racehorse was "practically lifted in" by perspiring volunteers.—*From "The Manchester Guardian."*

Zebra Rail Crossing

There was a zebra crossing on the main Edinburgh-Aberdeen railway line—a real zebra. The signalman could not see in the darkness what was tangling with the signal wires, so he gave all trains the red.

An engine moved up the line and spotted the cause of the trouble. The zebra was one of six which escaped from their trailer at a circus. It was captured.—*From the "News Chronicle."*

Rail "Creep" Problems

A train near Minneapolis recently had to stop when thousands of caterpillars swarmed on to the lines and prevented the train wheels gripping. This is said to be so common at Sudbury, Ontario, that some trains are equipped with special caterpillar-clearing devices. At Casablanca, in Morocco, a goods train was halted by snails on the line. Another train had to propel it as a gang of men cleaned the track ahead.

Swarms of locusts fairly frequently block tracks in Middle Eastern countries. Millipedes held up train services in Japan last year, when the wheels of trains trying to push their way slipped, and trains slipped down a gradient. The same difficulty is said to have been experienced with butterflies in Italy.

An earwig crawled into an electrical signalling installation at Hounslow, causing a short circuit and much dislocation of traffic. Queen Victoria was once held up on her way to Balmoral, when the driver of her train stopped at an obscured signal. Investigation proved it to be thickly covered by a swarm of bees.

Women Prefer Trains

Women prefer trains to any other mode of travel, according to Betty Barton, Director of Public Relations of the Business Research Corporation, Chicago. This significant fact is brought out in an article by Miss Barton in a recent issue of *Railway Age*. Miss Barton's statement is not based on her own opinion but rather on a public opinion survey in which approximately 3,500 women were questioned. An analysis showed that 72 out of every 100 women questioned expressed a preference for railway travel.

Miss Barton gives five principal reasons why women prefer trains. The passenger train provides: (1) opportunity for rest and relaxation; (2) a sense of security—a psychological necessity from the feminine viewpoint; (3) an opportunity to see the country through which one is travelling, or, as one woman put it, to see something more than clouds; (4) room for children to travel in comfort; (5) schedules which are not subject to cancellations because of weather conditions.—*From the "Information Bulletin" of the Centre d'Information des Chemins de Fer Européens.*

Round the station—

The Porter's Tale

When I was a young country porter
I couldn't be bothered to learn
How to make myself master of *something—*
All I wanted was money to burn.

I flitted from station to station,
My plastic young manhood was spent
In a ferment of pimply distemper
And a state of acute discontent.

I picked up good money in places,
But, in some mysterious way,
The bulk of it slipped through my fingers
And I'm back where I started, today.

I paid through the nose for my lesson
And, balancing profit and loss,
I've proved, to my own sad discomfort,
That rolling stones gather no moss.

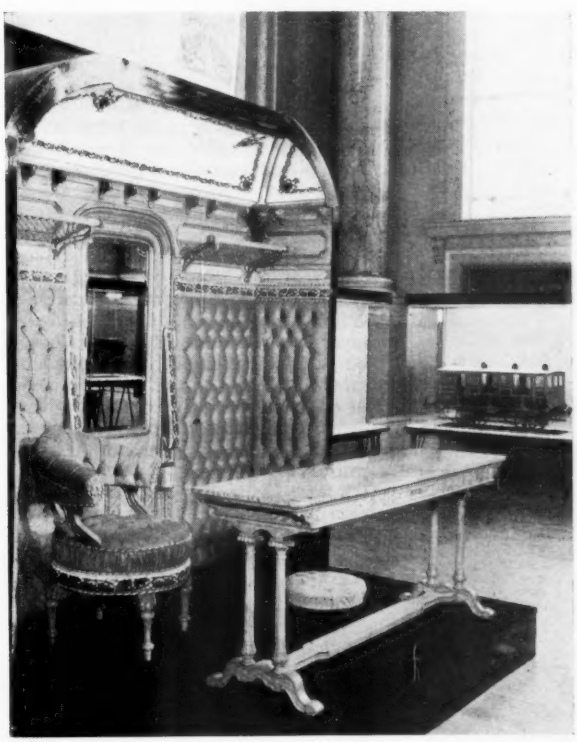
Now, here I am, just an old porter,
A no-account sort of a chap,
When I might have been someone important,
With lots of gold braid round my cap.

Ambition's all right, that's providing
You build up your steps, one by one,
But short cuts won't bring satisfaction,
Though, mind you, I *have* had some fun.

Experience teaches, they tell us,
But the odds are, nine times out of ten,
That, if I'd my life to live over,
I'd do the same daft things again!

A. B.

Royal Travel in 1874



Bulkhead of Queen Victoria's coach, G.W.R., 1874, on view at the Popular Carriage Exhibition at Euston. The original furniture shown includes the table presented to H.M. the Queen by the directors of the former G.W.R.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

EAST AFRICA

New Stations on Mombasa-Nairobi Line

Three new stations will open shortly on the Mombasa-Nairobi section, making a total of nine opened on this section since 1952. It is hoped that three more stations will be opened and in operation by August, when sufficient new locomotives and rolling stock should have arrived to allow of the operation of a more intensive train service under a new timetable.

One of the new stations, to be named Ikoyo, lies between Makindu and Kiboko, 215 miles from Mombasa. In 1910 Abdul Hamid Khan, one of the early permanent way inspectors of the Uganda Railway, killed a leopard that attacked him near the site of the station. Ikoyo, the Kamba name for leopard, is therefore being used to associate the station with this encounter.

Another new station, 107 miles from Mombasa, between Voi and Ndi, will be known as Irima, after the adjacent Irima Hill. It is related that on a rock on this hill, witch doctors once used to gather to pound medicines to "cleanse" those who raided and killed the Akimba. The verb of the word "kurima" means to cleanse or put off—hence the name Irima.

Detection of Washaways

On three occasions recently crews of the railcars which are being used for patrolling vulnerable sections of line in and around Nairobi during the hours of darkness, have discovered obstructions on the line not the work of Mau Mau saboteurs, but caused by the unusually heavy rains. Had the patrols not been in operation, locomotives might have been derailed, resulting in serious delays to trains.

The most recent incident of this nature was the discovery of a washaway between Limuru and Uplands, some 25 miles from Nairobi. A member of the crew reported that rain was falling at the rate of 3 in. an hour and visibility was only 10 yd. when the railcar tilted slightly and came to a stop. On investigation it was found that the obstruction was caused by silt from cuttings which had piled up on to the line to a depth of 1 ft. There was also a serious washaway.

On this occasion the mud-bespattered crew finally returned to Nairobi in the early hours of the morning having assisted the Engineering Department with the clearance of the obstruction besides affording additional illumination and protection for the repair gang.

INDIA

Training School at Perambur Opened

Shri O. V. Alagesan, Deputy Minister for Railways & Transport, performed the opening ceremony of the Railway Technical Training School at the Integral Coach Factory at Perambur, Madras, on March 20. In pursuance of the Ministry of Railways policy that the Indian railways should be self-sufficient as early as possible, they are pressing forward with the erection and staffing of the Integral Coach Factory.

The Minister said that the factory was expected to go into production by the end of next year. It will be called the Gopalaswamy Ayyangar Factory as Shri Ayyangar made the decision when Minister of Railways & Transport to build the factory in Madras. The estimated production is 350 coaches annually. The factory will require many technically-trained workers and supervisors.

To provide adequate theoretical and practical training in the several aspects of coach building, a technical school attached to the factory has been started. It is designed to accommodate 300 trainees at a time but by providing intensive training it is hoped to turn out about 600 persons annually so as to fill the posts required for running the factory. Thereafter the course of training will be designed to increase technical knowledge and meet normal wastage. The school, which has cost about 3½ lakhs, has its own attached workshops employing modern methods of training.

CANADA

Pacific Great Eastern Extensions

The Canadian Government will be asked to contribute 50 per cent of the cost of extending the Pacific Great Eastern Railway, which is owned by the British Columbia Government. The Premier of the Province said it now is clear the Federal Government does not intend to participate in the joint investment proposal advanced by a British Columbia Government delegation to Ottawa in December, but they would now make application to Ottawa to contribute with their government to extend the line.

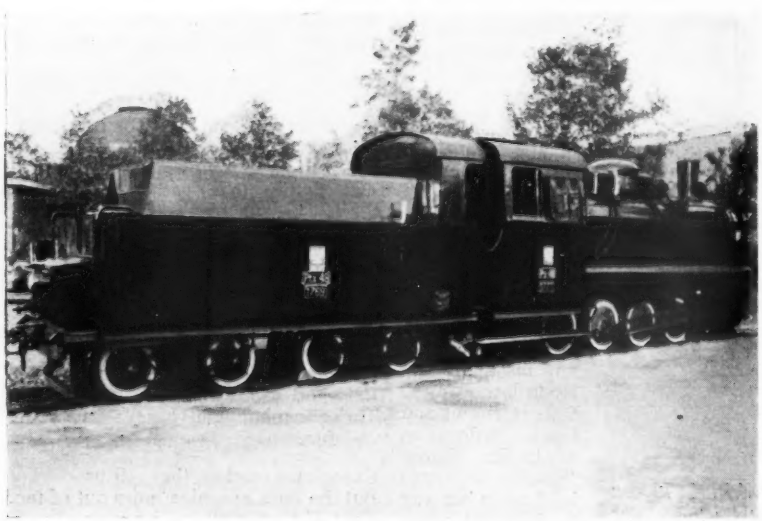
The railway is to be extended about 40 miles southward from its present southern terminus at Squamish to Vancouver and northward from Prince George, in the central interior, into the Peace River. The southern extension will cost $10,000,000 and the northern $50,000,000. The first application for Federal aid will be for the southern extension.

Labrador Iron Ore Line

The Quebec North Shore & Labrador Railway, the Iron Ore Company of Canada's new 360-mile line from Sept Isles to Schefferville, Quebec, will begin operation in August. Its construction has required the movement of 15,000,000 cu. yd. of material, and another 6,000,000 have been moved for the construction of roads and airports. Nineteen bridges have been built, two tunnels were driven, 440 miles of rail were laid and more than 2,000,000 cu. yd. of ballast tipped.

An airlift was inaugurated which in three years flew 15,000,000 ton-miles

German-built Locomotive for Poland



Eight-coupled locomotive constructed in Eastern Germany for use on narrow-gauge lines in Poland

of freight and 139,000 passengers, and served eleven temporary airstrips and 18 camps.

Some 1,500,000 tons of ore a year will be carried. It will move out in trains of 100 wagons, operated under centralised traffic control, and hauled by four diesel-electric locomotives whose combined tractive power almost equals that of two standard C.N.R. diesel road freight locomotives of two units each. The volume of 10,000,000 tons yearly requires seven trains daily each way during the ore hauling season June 1 to November 15. Trains will unload in a stockpiling yard at Sept Isles through a wagon dumper of 200 tons per hour capacity, and a ship-loading dock.

UNITED STATES

More Accelerated Train Services

In addition to the speeding-up, from April 25, of the New York Central "Twentieth Century Limited" and "Commodore Vanderbilt" and the Pennsylvania "Broadway Limited" between New York and Chicago, and number of other well-known trains was accelerated from the same date.

Among them are the Chesapeake & Ohio "Sportsman" and "George Washington"; the "George Washington" is accelerated 36 min. from Washington to Louisville, and in the reverse direction 30 min. from Cincinnati to Newport News; the eastbound "Sportsman," 44 min. later from Detroit than previously and 70 min. later from Cincinnati, reaches Washington 15 min. later, an acceleration of 55 min. from Cincinnati.

West of Chicago the "San Francisco Overland" jointly operated by the Chicago & North Western, Union Pacific and Southern Pacific Railroads, has been accelerated 60 min. in each direction. Continuing to leave Chicago at 4 p.m., it now reaches San Francisco at 2.20 p.m. instead of 3.20 p.m. on the third day; in the reverse direction it leaves San Francisco at 11.30 instead of 11 a.m., and reaches Chicago at 1 p.m. instead of 1.30 p.m. two days later.

The joint Chicago, Rock Island & Pacific "Golden State" streamline train between Chicago and Los Angeles has been accelerated 1 hr. 50 min. westbound and 60 min. eastbound, and the westbound "Imperial" by 45 min.

ARGENTINA

Level Crossing Accident

A serious level crossing accident took place on April 29 when the cross-country express "El Huemul," recently introduced between Rosario (General Mitre Railway) and Bahia Blanca (General Roca Railway), collided near La Primavera with a bus travelling from Huanguelén to Coronel Suárez. The bus was destroyed and as a consequence, 22 people were killed and four seriously injured, all of them passengers of the road vehicle.

FRANCE

Movement of Grain in Bulk

Several years ago the railways, in conjunction with flour millers, investigated the possibility of moving grain in bulk. Previously all grain had to be put into sacks, an expensive and not very satisfactory method of conveyance.

A type of tank wagon was specially fitted with hopper doors and put into service where the traffic was heaviest. Proving successful the arrangement is now being extended and since 1952 100 more wagons of this type have come into operation. The underframe is 7·65 m. (25 ft. 1 in.) long and is mounted on two axles; the capacity of the tank is 43 cu. m. (1,500 cu. ft.) The tare weight of the new wagon is 10 *tonnes*, and provided the appropriate axleload is not exceeded a maximum load of 30 *tonnes* can be carried.

Publications Received

British Standard B.S. 2067.—The British Standards Institution has recently published British Standard B.S. 2067 describing in detail the theory and technique of the Hartshorn & Ward method for the determination of power factor and permittivity of insulating materials at radio frequencies. This method has been adopted as a standard test in certain British Standards for insulating materials, and it is suitable for the measurement of power-factor and permittivity within a frequency range of 10 Kc/s. to 100 Mc/s. at normal room temperatures. The method is essentially one of capacitance variation in a tuned circuit with a thermionic voltmeter as a detector of resonance. Details are given of the technique to be followed in testing moulded and sheet material, tubes and liquids, and drawings are included to illustrate the basic test circuit and some of the basic equipment involved. Appendices describe the theory of the method and detail the essential features of the main components forming the test assembly. Copies, price 4s., may be had on application to the British Standards Institution, British Standards House, 2, Park Street, London, W.1.

Bakelite Progress.—The most recent issue of *Bakelite Progress* published by Bakelite Limited, in conjunction with Warerite Limited, a unit of Bakelite Limited, deals mainly with recent innovations in the company's plant and products, and emphasises the manifold uses of plastics in industry. Of these the largest group is comprised of the Vybak range of P.V.C. materials and the recent inauguration of a new vinyl rosin plant has meant a substantial increase in their volume. Several new grades of material have been produced, among these are Vybak sheet VR.215, a rigid constructional material intended for the fabrication of chemical and other industrial equipment, which is available in 48 in. × 36 in. sheet, in thicknesses up to $\frac{1}{8}$ in. Details are also included of the uses of Bakelite laminated materials, such as P.992, a phenalic-bonded, paper-based material, produced in thicknesses up to 2 in., with a minimum cross-breaking strength of 23,000 lb./sq. in., and a tensile strength of 14,000 lb./sq. in., which is stated to be particularly suitable for drilling jigs, press tools, router templates, and profile gauges.

The Properties of Tin.—The Tin Research Institute has recently issued a completely revised edition of its publication "The Properties of Tin." This new edition presents all the published atomic and nuclear, physical, physico-chemical, and metallurgical data concerning pure tin, but does not give data for tin alloys, which are covered in a separate publication of the Institute. Data are divided into main divisions—line spectra; X-ray; electrical and magnetic properties; crystallography; thermal and mechanical properties and so on. For many quantities, alternative values are given according to various investigations; where there is adequate justification one recommended value is given. Copies are available from the Tin Research Institute, Fraser Road, Perivale, Greenford, Middlesex.

G.N.R. (I.) Summer Tours.—For the benefit of clubs and other organisations planning summer outings, the Great Northern Railway Board has issued a folder "Tours and Excursion Fares from Belfast" which gives details of the special facilities extended to parties making a day trip to any point on the railway during the season. Particulars are also given of day and evening excursions to Warrenpoint and Newcastle, and of the Hills of Donegal and Bundoran trips.

Hancock Oxygen Cutting Machines.—Hancock & Co. Ltd., Progress Way, Croydon, has issued an illustrated brochure describing its oxygen cutting profile machines. Of particular interest is its most recent general-purpose machine, the Hancomaster, which is claimed to be equally suitable for rapid production work in both small or large quantities. Three machines of this type are made, U1, U2, U3, with cuting areas of 50 in. × 25 in., 60 in. × 30 in., and 80 in. × 40 in. respectively. The main features of the Hancomatic and other machines which are produced by the firm also are included, with details of the electronic tracer, non-back firing burners, C.P. and F.C. types, each of which are illustrated..

Seat Reservation Systems

New methods adopted by railways in different countries

(From a correspondent)

IT is frequently claimed that one great commercial advantage of road and air passenger transport in competition with railways is that purchase of a ticket for a long-distance journey assures a seat on a specified service without extra charge. On the other hand, an intending passenger by rail usually knows that if he travels at short notice, he can be reasonably certain of getting on a train without great delay, which is by no means always the case with air or road.

Nevertheless railways throughout the world in recent years have found it increasingly necessary to offer greater seat reservation facilities. In most European countries seats can be reserved in at least the principal main-line trains, whilst in some countries reservation is compulsory in respect of international trains, some long-distance trains, and fast trains of special stock with a limited number of seats. The Netherlands Railways confine seat reservation to international trains; Holland, however, is a comparatively small country, with no long internal journeys, whilst the interval train services ensure a frequent service between all important towns.

In Great Britain prewar facilities have been reintroduced gradually, and in the British Railways 1953-54 winter Timetable, seats can be reserved in some 3,975 trains in all. It would be hard for any intending passenger travelling from a terminal station to complain that seat reservation was any more awkward for him than for his neighbour making a similar journey by road or air; indeed he is probably better off, as he has more freedom of choice as to departure time.

Passengers starting their journeys from intermediate stations are not so favourably situated either in Great Britain or in other countries. Seat reservation offices generally are located at system or district headquarters and at the starting stations of the trains concerned, difficulty exists in guaranteeing reservations from intermediate stations. In some cases a seat can be reserved from the originating terminal for a passenger joining intermediately, but this involves the possible loss of revenue from a passenger who might have joined the train earlier on its journey.

New Zealand Method

As long ago as 1929 the New Zealand Government Railways had in operation a seat reservation scheme reputed to cater not only for passengers from terminal stations, but also for those joining trains at other points. This system is basically unchanged today.

The allocation of reserved seats and sleeping berths is centralised in an office adjacent to the booking office at Wellington Station. Each coach in a train is allotted a card measuring 11 in. by 9 in., which is perforated into seat tickets measuring $1\frac{3}{8}$ in. by $\frac{15}{16}$ in. These tickets show the type of coach (e.g. first class non-smoker), its code letter, the date of travel, details of the train, and the number of the seat. Train details are also indicated at the foot of the card.

When a seat is booked the appropriate ticket is torn off, the destination station inserted on the reverse side and the ticket handed to the passenger, or sent to the passenger or to the local station requesting the reservation. Behind the card is the corresponding office list, and when a ticket is torn off the seat number becomes visible on this list.

The stations from and to which the seat is reserved are entered in a space provided on the office list, which is handed to the guard before the departure of the train.

While the coach reservation cards are kept centrally in Wellington, passengers can reserve seats through their local station booking office. The local station notifies Wellington of the requirements by telegram, using a telegraphic code. The seat reservation ticket is sent to the local station for transmission to the passenger.

Each booking office is supplied with a progressive numbering machine which registers in one action on the back of the ticket the name of the issuing station and a progressive number. The machine also shows visibly the last number recorded, thus facilitating accounting.

Reservation from Intermediate Stations

To enable reservations to be made for passengers joining trains at intermediate stations, provision is made for the same seat to be reserved on two or more occasions, covering different sections of the train's itinerary. The perforated card ticket is used for the first reservation and paper tickets with carbon duplicates for subsequent reservations.

The coach cards are housed in Kardex cabinets, with 44 cards to a tray and nine trays to a cabinet; one cabinet normally holds the cards for one train for a month. Different coloured cards are used for different types of accommodation: first class, second class, smoker, non-smoker.

Canadian Practice

In the reservation office at Windsor Station, Montreal, the Canadian Pacific Railway, which was re-equipped with modern facilities in 1945 and briefly described in our issue of March 8, 1946, there is a cabinet of carriage diagrams which moves along an 18-ft. track between 16 operators. The staff receive calls over a telephone switchboard fitted with a 100-key system and with a total of 180 communication switches for the use of operators.

The cabinet contains location diagrams of all C.P.R. sleeping and parlour cars in regular and special service. It is in two units, one for sleeping and one for parlour cars, each unit with 60 drawers for carriage diagrams. The units operate with finger-tip control, and can be coupled to enable one person to handle the whole plan without changing position.

A further development in Montreal is the introduction in 1953 of the "will call" reservation method. Where reservations are required for a somewhat involved itinerary a passenger can telephone the Windsor station office, give details of what is required and then call for the tickets at his convenience.

Developments in the U.S.A.

There is no standard practice in the U.S.A. Seats are normally reservable at the passenger's option in all Pullman and day coaches. There is, for example, the modernised system installed by the Chicago, Rock Island & Pacific Railroad at La Salle Street Station, Chicago. A circular rotating reservation board holds the train diagrams, and by spinning this reservation clerks have details of all unreserved space readily available. Inquiries for reservations are received by the clerks through the flashing of a light on a panel; replies can be given without the clerk leaving his position on the board. Three thousand units of space, Pullman and parlour car, can be accommodated on the board and more than 2,000 telephone calls handled daily. A patent photographic machine preserves on film a permanent record of train space diagrams.

Experiments with a new type of apparatus were begun in 1953 at Pittsburgh and Cleveland by the Pennsylvania and New York Central Railroads respectively. Diagrams and charts have been abandoned in favour of pre-printed reservation coupons. A separate reservation coupon is printed for each unit of accommodation on every train for six weeks in advance. These coupons are arranged at central reservation offices in large tub files by train, date and type of space, and the availability of space at any moment is determined by the number and kind of unsold coupons.

Of particular convenience to intending passengers is a large illuminated reservation availability board prominently placed over the ticket office. This board, which indicates by an ingenious arrangement of lights and letters, the space reservable on all trains for one week in advance, shows at a glance, both to railway employees and to passengers, what kind of accommodation remains available. Passengers reserving a seat

or sleeper by personal call at the central office are handed the coupon extracted from the file, a copy being retained for the office file; in the case of the Pennsylvania Railroad, where reservations are made at other ticket offices in Pittsburgh, an Intrafax facsimile transmission system enables a facsimile reservation coupon to be sent in response to a telephone request; the system is also used to transmit regular space availability telegrams to such ticket offices.

Recording of Accommodation

In recent years U.S.A. railways have experimented with electrical devices for the reporting and recording of train space. There is, for example, the Intelex apparatus which is located in a central office and linked by special lines to other offices in the area. When an intending passenger calls at any seat reservation office the clerk sends a message in code to the machine, which indicates automatically whether or not the required seats or other accommodation are available.

If space of the type required is free the sale is automatically recorded and details advised to the ticket office. The apparatus also includes equipment whereby the "reservation state" of any train can be advised periodically to all ticket offices. When reservations are cancelled the Intelex machine automatically corrects its records.

A similar system is the Infomat, installed by the Pennsylvania Railroad at Cleveland. This consists of a central control machine and smaller machines at each ticket office. When a passenger makes an inquiry the clerk indicates on his set, by the use of a series of dials and buttons, the date, train, and destination on which accommodation is required, and within eight seconds a dial at the top of the machines shows what types of space are still reservable. A direct telephone circuit from the ticket office to the central office enables the reservation to be completed.

German System

On the German Federal Railway, to preclude duplication, only one seat reservation plan is prepared for each train or through coach, and this is normally held by the terminal station from where the train starts. All booking offices and travel agencies are able to effect seat reservations, and such offices normally order required accommodation by telephone or telegraph from the station holding the seating plan, reservation tickets being issued to passengers when specific seats have been allocated. Reservations can be made from one month up to three hours before the departure of the train from the originating station.

Although only one seat reservation plan is prepared; the district office may sometimes make a block allocation of seats to booking offices and travel agencies where demand is heavy. A booklet is published periodically showing the trains and through coaches in which seats can be reserved; trains are listed under the appropriate District offices controlling the issue of the seating plan.

Early in 1948 the French National Railways decided to improve the seat reservation arrangements at stations on the Riviera, with their all-the-year-round tourist traffic, necessitating stopping most long-distance trains at each station in the area and the provision of reservation facilities at 14 places ranging from Ventimiglia to Draguignan.

Until then an allocation of seats was made to each of these stations, based on the average bookings for summer and winter. Sometimes one station's allocation would be under booked yet the station would be unwilling to release the surplus until the last minute. Complaints were many, both from station staffs and local authorities.

Under the new system, brought fully into use in 1949, the seat reservation offices at each of the stations mentioned are connected by special telephone lines to a central bureau at Nice. This bureau is independent of the station reservation office at Nice, and is not accessible to the public except by telephone. Peak requirements call for eight operators in the central bureau, and they are seated around a circular table in the centre of which is a drum 7 ft. 2 in. in dia., consisting of four separate horizontal layers each mounted separately on ball bearings and revolving around the central axis. Each layer is divided into 32 vertical sections and each section into seven small compartments. Each section holds seven days' diagrams for one coach in a particular train, each diagram occupying one small compartment. All first-class diagrams are in the top layer of the drum; second-class diagrams are in the second layer; and the diagrams for third-class coaches are in the bottom two layers.

When a passenger applies for a seat at any of the 14 stations the counter clerk notes the requirements and telephones the central bureau for a reservation. The counter clerk prepares a seat voucher in duplicate, the original being handed to the passenger and the duplicate sent to the central bureau. At the central bureau the operator has special diagrams, each numbered seat being covered by a gummed label bearing the same number.

When a seat is allocated the operator detaches the appropriate label and enters in the space underneath the name of the passenger and the office requesting the reservation. The detached label is stuck to a slip for ultimate hanging in the coach. Periodically, the labels are compared with the duplicate vouchers sent in by the station offices. Reservations can be made also by telephone or letter.

Paris Lyon Reservation Office

With the increase of traffic resulting from the electrification of the Paris-Lyons line, a new reservation office was opened at Paris Lyon in 1952. In this case the principal factors were the high percentage of reservations made by letter and the many trains composed of vehicles for various destinations.

The new office was partitioned into cubicles, six of which are in use during the winter months and twelve during the summer; the cubicles are divided into groups of two cubicles each, trains being divided into the same number of groups according to destination. Of each group, one cubicle handles first and second class reservations and the other third class. In this case revolving drums are not used, half-sized train diagrams being kept in racks in the cubicles.

A special feature is an internal communication system connecting the cubicles with counter staff dealing with the public at the station and in town offices. Special telephone links are also available. Seat reservation tickets are not made out by the staff in the central office; the system used at the Riviera centre is employed for this purpose. To reduce periodical peaks every effort is made to induce the public to make reservations by correspondence. The working of this centre during the winter of 1952-53 was described in our April 17, 1953, issue.

Facilities at Paris Montparnasse

The reservation centre at Paris Montparnasse was designed essentially to handle telephonic requests for seats. The present arrangements obviate the necessity for telephonists leaving their places. They sit round an H-shaped table, where also are seated one or two reservation clerks provided with coach diagrams in the form of sheets measuring approximately 8 in. by 4 in. on which are numbered squares representing individual seats. Sheets for third class reservations are yellow and very slightly larger than the green sheets for second class seats, and, to facilitate handling in the files in which they are kept, the top line is divided into four rectangular sections and alternate sections detached in each group of four sheets. The few first class reservations are handled differently.

When an inquiry is received the telephonist completes a form giving the name of the enquirer, the date of travel, the train, the destination, and the seats required. The applicant is then asked to wait and, if second or third class seats are required, the form is passed to the reservation clerk at the same table, either by hand or by means of a small conveyor belt. The telephonist is then free to deal with another call on a second telephone; each telephonist is responsible for two telephones. If first class accommodation is required, the telephonist retains the form and contacts a separate office by a special telephone line.

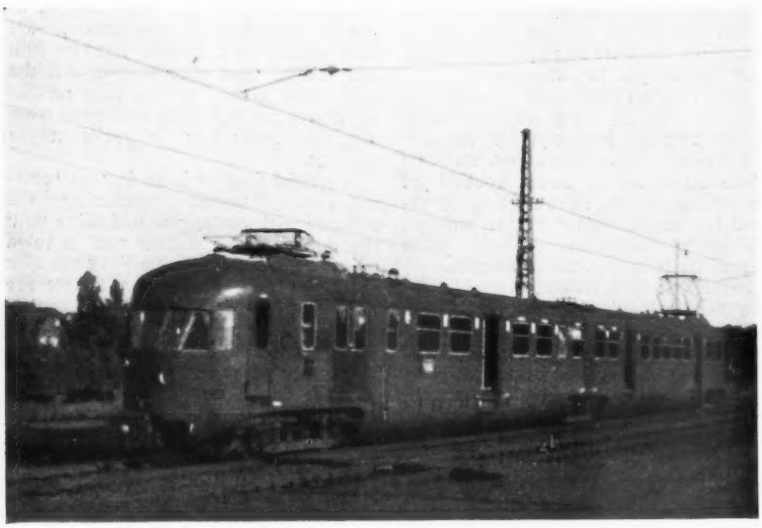
In the case of second and third class seats the reservation clerk, on receiving a form, marks off the appropriate seats on the sheet diagram and inserts details of the train and the numbers of the seats and returns it to the telephonist who advises the applicant.

XUM

Netherlands Multiple-Unit Electric Train Performance

High speeds with low power output

By P. W. B. Semmens



Two-coach streamlined electric train, Netherlands Railways

PERFORMANCES by Netherlands Railways electric locomotives and multiple-unit trains were reviewed in *The Railway Gazette* for March 20, 1953. A subsequent visit to Holland has facilitated recording of further outstanding journeys with multiple-unit stock, with performances markedly superior to those previously reported.

The first part of the new high-level station at Leyden was brought into use with the introduction of the 1953 summer services, but the speed of all trains had still to be restrained over the approach embankments, the sand of which was not fully consolidated. As a result, overall timings between Leyden and Heemstede-Aerdenhout or Haarlem were half-a-minute or more longer than they would otherwise be. Tables 1 and 2 give a series of timings over this stretch of line in both directions. The nine journeys represent all those made by the author on this stretch of line at all times of the day during ten days in August, 1953, and were in no way selected.

Half the journeys were accomplished at an actual speed of more than 60 m.p.h. start to stop, while the net average speeds of all but one were more than 60 m.p.h. The standard timing for the half-hourly interval service trains over this stretch is 17 min. each way. On Sunday evenings the frequency of the service between Rotterdam and Amsterdam is doubled, the extra trains calling additionally at Laan van Nieuw Oost-Indië, a station on the outskirts of The Hague. This is accomplished without any increase in overall timing, and the 15·2 miles from Heemstede-Aerdenhout to Leyden are accordingly booked to be covered in 16 min. (57 m.p.h.). As the tables show, such a timing is normally achieved by all trains over this section. It could be done even in normal conditions without exceeding 70 m.p.h., as on the slowest run (No. 5 in the down direction) the speed was kept below 70 m.p.h. except for one km. on either side of Voorhout, where 71 m.p.h. was recorded. Journey No. 1 in the up direction was on the Hook of Holland night boat train, made up from non-streamline stock and does not call at Heemstede. Its overall timing for the 17·9 miles from Leyden to Haarlem is 20 min.; this is much easier than those of the interval service trains making the intermediate stop. On the fourth up journey, the train, having reached 78 m.p.h., was stopped by signals at Noordwijkerhout station, which is closed to passengers. The concluding 9·3 miles from there were then run start-to-stop at an average of 57·2 m.p.h., with a maximum of 84 m.p.h. At this speed the power output required would be some 1,680 h.p.

Types of Train

With some of the two-hourly Maastricht-Amsterdam expresses, electric locomotives hauling coaching stock are used.

The remainder of these trains are composed of normal streamline stock; they are somewhat slower, and call at all stations between Roermond and Utrecht. The standard booking is 161

DOWN **Table 1**

Netherlands Railways : Heemsteede-Aerdenhout—Leyden

Journey number		1	2	3	4	5
Formation of train in types of units		5+2	5	5+4+T.P.O.	4+2+2	5+5
Weight : tare (tons)		294	210	426	349	420
,, gross (tons)		325	230	455	385	460
Dist. Miles		Times Min. sec.	Times Min. sec.	Times Min. sec.	Times Min. sec.	Times Min. sec.
0·0	Heemsteede-Aerdenhout	0·00	0·00	0·00	0·00	0·00
13·2	Warmond	11·38	12·23	11·56	11·51	12·53
15·2	LEYDEN	p.w.s. 14·48	p.w.s. 15·21	p.w.s. 15·07	p.w.s. 15·09	p.w.s. 16·06
Average speed, start to stop (m.p.h.)		61·6	59·4	60·3	60·2	56·7
Maximum speed (m.p.h.)		81	76	78	76	71

UP **Table 2**

Netherlands Railways : Leyden—Heemsteede-Aerdenhout

Journey number		1	2	3	4
Formation of train in types of units		5	5	3+5	5+4+T.P.O.
Weight : tare (tons)		236	210	312	414
,, gross (tons)		245	227	335	445
Dist.		Times	Times	Times	Times
Miles		Min. sec.	Min. sec.	Min. sec.	Min. sec.
0·0	LEYDEN	0·00	0·00	0·00	0·00
5·9	Noordwijkerhout	—	—	6·36	Sigs 7·16
					8·30
15·2	Heemsteede-Aerdenhout	14·35*	15·15	14·34	18·18
Average speed, start to stop (m.p.h.)		62·6*	59·8	62·6	57·2†
Maximum speed (m.p.h.)		77	75	80	78/84

* Passing time and start to pass speed. † Average speed Noordwijkerhout to Heemsteede-Aerdenhout.

min. for the 111·3 miles (41·5 m.p.h.) from Maastricht to Utrecht, inclusive of 13 intermediate stops totalling 23 min. Table 3 gives the times and speeds for one of these trains as far as Eindhoven and shows very fast running even over short inter-station distances. The first four sections were covered successively at 51·4, 56·4, 63·6, and 58·7 m.p.h. start-to-stop.

Table 3

Netherlands Railways : Maastricht—Eindhoven.
Composition—
To Sittard : 4-coach streamlined electric unit
+ 2-coach streamlined electric unit
+ T.P.O. trailer coach—288 tons tare, 310 gross
From Sittard : + an additional 4-coach streamlined electric unit—455 tons tare, 500 gross

Dist.	—	Times	speeds
Miles		Min. sec.	m.p.h.
0·0	Maastricht	0·00	—
4·0	Bunde	5·02	62
11·2	Lutterade	12·34	71
13·6	Sittard	15·52	—
4·1	Susteren	5·09	63
6·9	Echt	7·46	65
11·2	Maasbracht	11·04	72
15·2	Roermond	16·10	—
9·9	Kelpen	9·32	81
15·0	Weert	14·09	—
6·3	Maarheeze	6·52	79
10·8	Heeze-Leende ...	11·03	82*
3·4	Geldrop	5·09	65*
		Sig. stop	—
3·8	Eindhoven	8·32	—

* Maximum speed before stop.

The most noteworthy performance was between Roermond and Weert, where the average gradient for the 15 miles is 1 in 2,400 against the train. The one-mile climb at 1 in 203/225 to the bridge over the Wessem-Nederweert canal only reduced the speed by 3 m.p.h. from 81. The power output here was 2,560 h.p. referred to level track, or 53 per cent of the installed total of 4,800. There are two daily bookings over this stretch at exactly 60 m.p.h., with an additional one on Sundays.

Streamlined electric multiple-unit train of a type now maintaining fast schedules in the Netherlands

All these timings were recorded during everyday running, and are in no way exceptional, as many journeys on other routes show. The daily total of over 200 electric schedules at 60 m.p.h. or over, as mentioned in a correspondent's article in *The Railway Gazette* of November 13, 1953, clearly does not present difficulties for the existing multiple-unit train sets.

Fast Interurban Services

The multiple-unit electric refreshment car trains and branch line connections enable travellers from all important population centres, at least on the mainland, to leave home after 7 a.m., spend 8 hr. in Amsterdam, The Hague, or Rotterdam, and arrive home by midnight, and few important centres are more than 3 hr. by rail from Amsterdam, the exceptions being in Zeeland, on the island of Walcheren where the line between Roosendaal, Middelburg, and Flushing has not yet been electrified. The provincial capitals of Leeuwarden, Groningen, and Maastricht, are well within 3 hr. of Amsterdam by multiple-unit electric train.

Today the Netherlands Railways are operating what is probably the fastest interurban service of any railway in Europe with such short distances between stops.

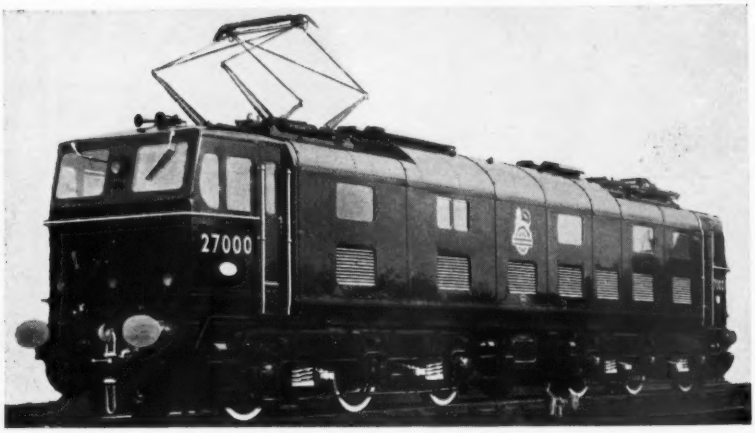
B.E.T. Omnibus Services Limited Meeting.—The annual meeting of B.E.T. Omnibus Services Limited was held in London on May 27. In his speech the Chairman, Mr. J. S. Wills, said that, although road transport was still subject to a tax of 214 per cent on fuel oil, British Railways had announced plans for the extension of the use of diesel-powered trains. British Railways paid no tax on diesel fuel. It seemed to him a Gilbertian situation. The abolition of the tax would best suit passengers. At present, in large areas of the country, road and rail passenger traffic were both under B.T.C. control. He thought that this should be stopped. The Thesiger Committee had found that in such situations, where there was no independent operator, the control of competition between the Commission's bus interests and the railways had largely passed from the Licensing Authorities to the Commission. This, he thought, was contrary to the spirit of the 1953 Transport Act. The 1947 Transport Act gave the Commission a form of extra-legal power to indulge in unrestricted competition on the roads. Mr. Wills paid tribute to the way in which the Chairman of the British Transport Commission and his colleagues had taken a statesmanlike view of their tasks. They had agreed that the part ownership of a company by the Commission could not properly be used to prevent it fighting for existence, and they had not used their powers of unrestricted competition. In the Transport Act of 1953 the Conservative Party had taken steps to fulfil its pledges to denationalise any road passenger undertaking which might be nationalised and it was now for the Government to use these powers. The original road and railway partnership in the company had now become one between private enterprise and the State. This principle might be extended.

San Paulo (Brazilian) Railway Co. Ltd.—The net revenue account for the year 1953 of the San Paulo (Brazilian) Railway Co. Ltd. shows a balance from the Brazilian account of £22,814, against £9,058 for the preceding year, increased with interest, recoverable from winding up of the London pension fund, and so on, to £42,023 (£29,107). After deducting administration expenses of £14,424 (£20,241), loss on sale of investments £612 (nil), and premium on remittances from Brazil £26,896 (nil), there remains net revenue of £91 (£8,866), raising the revenue balance forward to £238,917 (£238,825). Mr. W. B. Common, the chairman, says with regard to non-railway lands, that on April 9 last, a notice had appeared in the Brazilian *Official Journal* that the President of the Republic had ruled to the effect that all lands in dispute were included in the scope of the September, 1946, expropriation decree and that, therefore, no further compensation was due to the company in respect of them. They had thought it well, Mr. Common added, to give to the Foreign Office a very full report on the matter and to invite their official assistance to safeguard the company's rights.

Ribble Motor Services Limited Results.—The board of Ribble Motor Services Limited recommend a final ordinary dividend of 7½ per cent for the year ended March 31 last. This makes a total of 12 per cent scrip issue. This compares with an interim dividend of 10 per cent on the former capital and a final of 7 per cent on the present capital in the previous year. Group net profits were £286,679 (£217,235) after tax provision of £187,453 (£129,244). The parent's net profit was £281,976 (£206,578). General reserve receives £100,000 (£51,558) and £238,769 (£238,183) is carried forward.

Co-Co Locomotives for Manchester-Sheffield Line

Mixed traffic type with regenerative braking



Mixed-traffic locomotive for Manchester-Sheffield section, British Railways, Eastern and London Midland Regions

THERE are various mechanical and electrical differences between the seven new Co-Co locomotives for the Manchester-Sheffield line, now in process of electrification (see also our February 12 issue) and the Bo + Bo class now in service. In the new locomotives, intended primarily for passenger service and having a maximum speed of 90 m.p.h., the buffing and drawgear, instead of being on the bogies, is mounted on the body under-structure, which consists of rolled steel sections suitably cross braced and stiffened over the large diameter bogie centres.

The bogie frames are of the box type fabricated from $\frac{7}{16}$-in. plates and with their centres located on the centre line of the axleboxes. They are braced together by two cast steel cross stays in which the double bolster can slide transversely and through which the tractive force is transmitted via the bolster to the bogie centre on the body structure. The weight of the body is carried by four spherical bearers sliding on each bolster, which in turn rests on laminated springs supported by swing links from the bogie cross stays.

Equalising beams resting on the axlebox tops are arranged inside the box frames and suspended therefrom by tension bolts and twin nests of coil springs. The axleboxes are fitted with Timken roller bearings and slide in horn gaps faced with manganese steel liners.

Motor Suspension

The three nose-suspended motors in each bogie are supported by a link from the cross stays fitted with Silentbloc bearings, and also located laterally by a similar smaller bearing, so that the wheel bosses and motor bearings, which have a generous lateral clearance, never come into contact while all movement of the motor is accommodated by the Silentblocs. This lateral restraint, combined with some vertical movement, is to provide for satisfactory running at higher speeds than those required of the Bo + Bo locomotives. Each axle is driven through single-reduction resilient gearing having a ratio of 17 : 64.

The layout of the cabs is similar to that of the Bo + Bo locomotives now in service on the Wath branch; they are connected by a side corridor from which access can be obtained to the high-tension and resistance chambers and also to the boiler and machinery compartments. The door in the high-tension chamber, also giving access to the resistances, is mechanically and electrically interlocked by the reverser key on the master controller, so that it can be opened only when power is off and the pantographs lowered.

Both cabs contain, on the driver's left hand, the straight air and vacuum brake valves; and on his right the master controller and auxiliary switches, while the instrument and gauge panel is located in front. The driver's seat is adjustable for height, and at his feet are the deadman's pedal and sanding switch. A push-button is provided on the right-hand side of the driver's desk, so that operation of the deadman's device can be suspended long enough to permit the driver to cross to the opposite side of the cab if necessary.

Mechanical parts of the locomotives were built at the Gorton Works of British Railways. Overall dimensions are as follow:—

Length over buffers	59 ft. 0 in.
Wheelbase...	46 ft. 2 in.
Bogie centres	30 ft. 6 in.
Overall width	8 ft. 10 in.
Weight in working order ...	102 tons

The electrical equipment has been supplied by the Metropolitan-Vickers Electrical Co. Ltd. With six motors, three groupings are provided, and the accelerating lever itself effects transitions while notching up, instead of a separate combination handle being used for this purpose, as in the Bo + Bo locomotives. Control is effected by electro-pneumatic contactors. The starting resistances are in three banks. Regenerative braking, which has proved a valuable means of controlling heavy goods trains with the Bo + Bo class, is again provided in the new Co-Co type.

There are two motor-generator sets, each driving a blower for traction motor ventilation in the adjacent bogie. One set supplies 50V. d.c. for battery-charging, control gear, lighting, and heating; while the other provides separate excitation for the traction motors during regenerative braking.

Braking

The brake equipment consists of a Westinghouse vacuum - controlled straight air system with independent locomotive brake, the air brakes and controls for the vacuum brakes being inter-connected so that compressed air is used for operating the brakes on the locomotive and vacuum for the train. Both systems have automatic action for deadman's emergency or breakaway. The locomotive brake can be operated separately or in synchronism with the train brake, and is arranged to make an immediate equivalent application during regenerative braking should the latter fail.

Compressed air for braking, electro-pneumatic valves, sanding gear and Pneuphonic horns is supplied by a motor-driven compressor, and the vacuum is provided by a Westinghouse motor-driven exhauster. There are four brake cylinders on each bogie, from which the rigging is operated through Westinghouse slack adjusters.

GLENFIELD & KENNEDY LIMITED ISSUE.—The capital reorganisation of Glenfield & Kennedy Limited, which was recently approved, is being implemented by the offer of 395,000 5½ per cent cumulative preference shares of £1 each, at 21s. 6d. per share, to existing preference and ordinary holders registered on May 10. The issue will be payable in full on application. With this issue, the preference capital will total £705,000 and it is probable that a further £295,000 of preference capital will be issued soon as consideration for the purchase of certain shares in subsidiaries which are at present held outside the group. The preference capital will then total £1,000,000. Power has been reserved to create and issue a further 500,000 £1 preference shares to rank with this £1,000,000. The results of the company for 1953 were given in our issue of April 30.

British Railways Class "8" Locomotive

Three-cylinder engine with British-Caprotti valve gear for heavy express passenger services

THE British Railways has recently completed at Crewe Works a class "8" locomotive which incorporates certain features not previously applied to British Railways standard engines. The locomotive, No. 71000, which has a tractive effort of 39,080 lb., was designed at the Derby Works under the direction of Mr. R. A. Riddles, former Member for Mechanical & Electrical Engineering, Raiway Executive. The engine is intended for operating heavy express passenger services, and is fitted with three cylinders, steam-distribution being by means of British-Caprotti valve gear, designed and manufactured by Associated Locomotive Equipment Limited. The leading particulars are as follow: —

Cylinders (3), dia. and stroke	18 in. × 28 in.
Wheels:	
Bogie, dia.	3 ft.
Coupled, dia.	6 ft. 2 in.
Hind truck, dia.	3 ft. 3½ in.
Tender wheels, dia.	3 ft. 3½ in.
Wheelbase:	
Coupled	14 ft.
Total engine and tender	59 ft. 3 in.
Heating surface:	
Tubes	2,264 sq. ft.
Firebox	226 sq. ft.
Total evaporative	2,490 sq. ft.
Superheater	691 sq. ft.
Grate area	48·6 sq. ft.
Tractive effort	39,080 lb.
Weight in working order:	
Engine	101 tons 5 cwt.
Tender	55 tons 10 cwt.
Total	156 tons 15 cwt.

The boiler is of normal design with riveted joints throughout, working at 250 lb. sq. in. and is the same as that fitted to the British Railways standard class "7" locomotives, except that the firebox is one foot longer. The shell, excluding the front tubeplate, is of 34/38 ton tensile, carbon manganese steel, the barrel consisting of two rings, the second ring being tapered and forming a true cone. The two rings are rolled from $\frac{19}{32}$ in. thick and $\frac{21}{32}$ in. thick plate respectively, the outside diameters being 5 ft. 9in. at the front and 6 ft. 5½ in. at the firebox end.

The smokebox tubeplate is of the drumhead type, ¾ in. thick, and there

British Railways prototype class "8" 4-6-2 type locomotive fitted with British-Caprotti valve gear

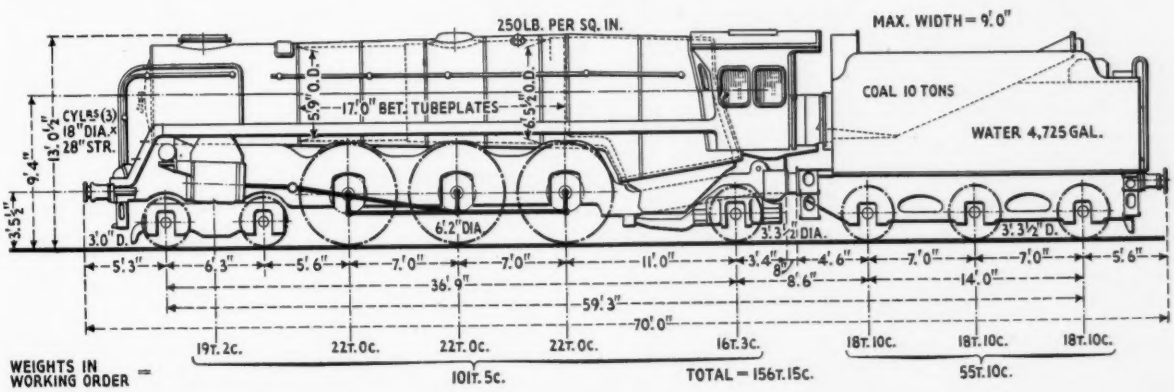


Diagram showing the principal weights and dimensions

are 40 large flue tubes 5½ in. diameter outside, 7 s.w.g. thick, and 136 small tubes 2⅛ in. diameter outside, 11 s.w.g. thick. The length between tubeplates is 17 ft. The regulator is of the multi-valve type supplied by the Superheater Co. Ltd. and the valve is incorporated in the superheater header. It has a connection, controlled by the pilot valve, for supplying steam to return the Caprotti valves to their seats. Access to the regulator valve is by a detachable cover in the top of the smokebox.

The boiler is fed through two separate clack valves placed at 30 deg. on each side of the vertical centre line of the front barrel. The clack valves deliver on to two inclined trays, which deflect the incoming water round the inside of the barrel clear of the tubes. A steam manifold is fitted on the top of the firebox in front of the cab, and is provided with separate shut off cocks to each steam supply pipe, as well as a main shut off valve, and are operated from inside the cab. Two direct loaded safety valves are mounted on the barrel, and immediately behind the dome.

Monel Metal Stays

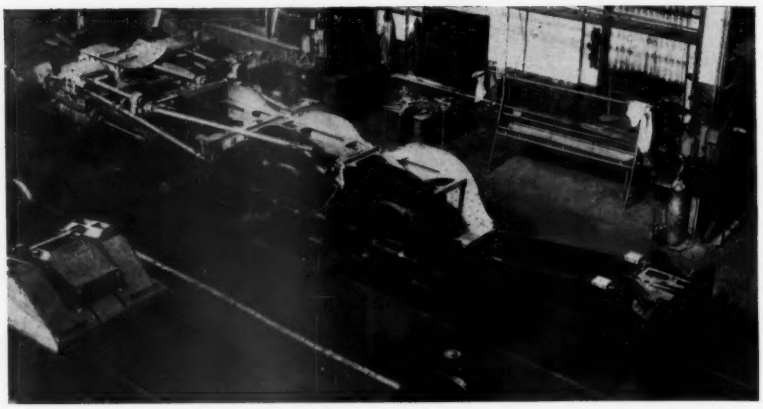
A Belpaire firebox with wide grate is fitted. The steel wrapper plate is ½ in. thick and the inner firebox is of copper, and has a ⅝ in. thick wrapper plate. The front of the firebox is extended into the boiler barrel to form a combustion chamber having a 1 in. thick tubeplate. Firebox waterspace stays are of Monel metal, fitted with steel nuts inside the firebox, except alongside the lap joints of the door and throatplate, where riveted copper stays are used.

The roof and transverse stays are of 25/30 ton tensile steel, the former being riveted on the outside and fitted with nuts on the inside. The longitudinal stays are of 37/43 ton tensile steel. The firebox is 8 ft. 0⅛ in. long outside, the width tapering from 7 ft. 9 in. at the front to 7 ft. 4 in. at the back, giving a grate area of 48·6 sq. ft. The boiler and firebox are lagged with a light-weight Fibreglass mattress.

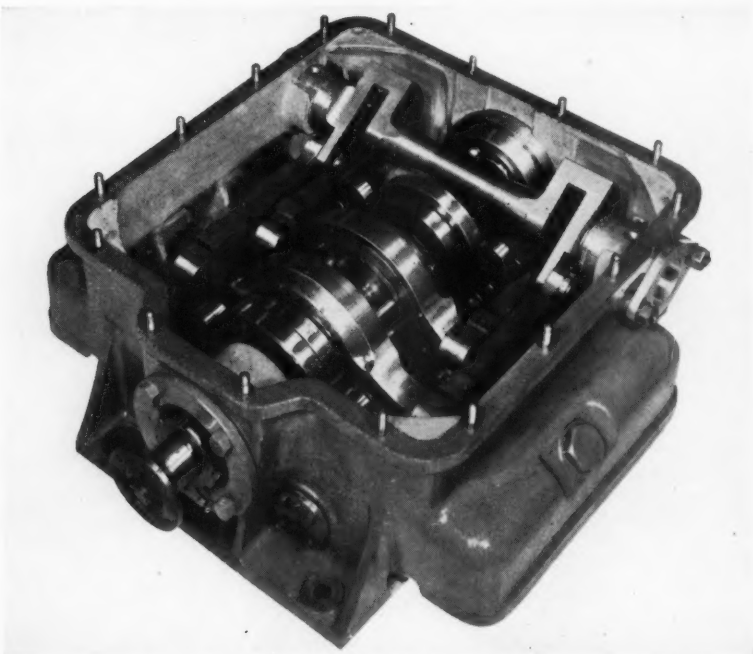
A rocking grate is provided, consisting of 14 rocking sections, seven each side of the centre line. Each rocking section carries 14 renewable finger type firebar units, making a total of 196 units for the whole grate, giving a 43 per cent air space. The two sides of the grate can be rocked separately from the footplate, the operating gear being so arranged that two different travels can be employed, full travel for dropping fire and a shorter travel for agitating the fire.

The ashpan has three hoppers, one between, and one outside of each of the frames, and is of the self-emptying type, having bottom flap doors on the hoppers, connected by a shaft with universal joints and operated by levers from ground level. Front damper doors on each hopper, and the back damper door of the centre hopper, are opened and closed by screw gear worked from a handwheel on the fireman's side of the cab. This allows a fine adjustment of the air opening to be obtained.

The smokebox is of the cylindrical type, resting on a saddle which is cast integral with the inside cylinder and the inside slidebar carriers. The twin blastpipe has plain circular caps of 4 in. nozzle diameter, each incorporating a blower ring. The smokebox is of the self-cleaning type having plates and a wire mesh grid so arranged as to prevent accumulation of ash in the smokebox. A tri-tone chime whistle is fitted on the right-hand side, operated from the cab by flexible cable passing down the right-hand handrail on the boiler. A stuffing box on the left-hand side allows the regulator shaft to pass through the smokebox plate.



The locomotive under erection, showing the cylinder and cambox assembly



Cambox as fitted to the inside cylinder, with the cover removed

Engine Frame and Axleboxes

The main frames are 1¼ in. thick plates spaced 3 ft. 2½ in. apart, the centre lines coinciding with the centre of the axlebox guide faces. The axlebox guides are welded integrally with frame plates and are fitted with manganese steel liners. The frames are well braced by vertical and horizontal stretchers. Two of the vertical stretchers support the front of the boiler barrel and the firebox throatplate on brass liners, while the back of the firebox is carried on brackets on the rear extension frames. The side footplating is carried by brackets fixed to the boiler.

The rear end frame extension consists of two 2 in. thick slabs riveted to the main plates behind the trailing coupled wheels, and carrying a cast-steel drag-box at the hind end. A single drawbar is provided between the engine and tender. The engine and tender are carried on British Timken roller-bearing axleboxes throughout, those for the

bogie and intermediate and trailing coupled axles being of the non-split cannon type. The faces of the axleboxes in contact with the horn guides are provided with manganese steel liners welded to the body of the axlebox.

Springs for the engine and tender, excluding the hind truck, are of the laminated type. The plates are of carbon steel, the buckles being shrunk on and secured by vertical centre rivet. Underhung spring brackets, integral with the horizontal frame stretcher and fitted with rubber damping pads and hangers in tension, are provided for the coupled axle springs. The springs have a span of 4 ft. when loaded. The hangers are of the solid type, slotted at each end to take cotters, adjustment of the springs being obtained by fitting cotters of suitable depths. The spring gear is so arranged that wheel sets can be dropped complete with springs and hangers.

The three cylinders which are 18 in. dia. by 28 in. stroke, are steel castings with cast-iron liners for the cylinder barrels. The inside cylinder which drives on the leading coupled axle is located forward of the two outside cylinders which drive on the intermediate coupled axle. The piston heads are steel forgings and are flash butt-welded to the piston rods, while the slidebars are of the three-bar type with underhung crossheads. Steam operated cylinder cocks of large diameter are fitted to the cylinders.

Caprotti Valve Gear

Steam distribution is by means of British-Caprotti valve gear in which separate inlet and exhaust poppet valves at each end of the cylinder are actuated by rotary cams. The drive for the camboxes on the outside cylinders is taken from the intermediate coupled wheels by means of worm gears mounted on return cranks. Tubular shafts transmit the drive from the gearboxes to the camboxes.

The drive for the inside cambox is taken from an extension on the worm-shaft on the left-hand cambox through a right-angle bevel gearbox. The inside cambox is accessibly placed in front of the smokebox saddle. The locomotive has end-on position of the reversing wheel in the cab with a transmission tube to a self-locking reversing gearbox on the left-hand side of the engine. Two cross-shafts with Layrub flexible couplings connect across the engine to the other worm reversing gearboxes.

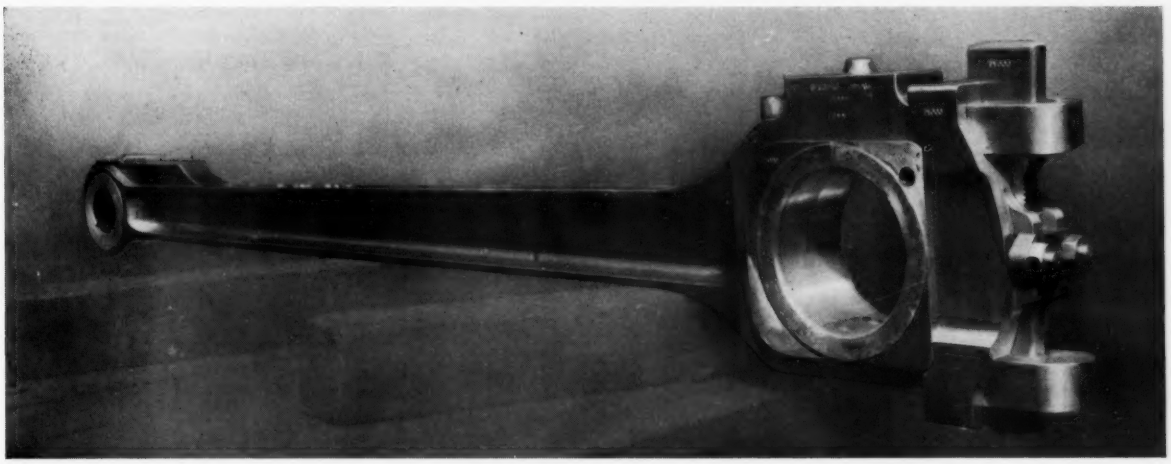
Engine Reversing

From each of the three reversing gearboxes, a transmission tube with flange coupling at the rear, and spline coupling at the front, connects to each respective cambox. Reversing the engine is done by advancing or retarding the angular position of the cams relative to the camshafts, and any cut-off desired is obtained by the angular adjustment of the inlet cams in relation to each other.

Cylinder lubrication is by means of mechanical lubricator through atomisers which mix saturated steam with the oil before entering the cylinders. The atomisers are controlled by steam taken from the cylinder cock actuating valve. When the cylinder cocks are closed the actuating valve is open and supplies steam to the atomisers. Conversely, when the cylinder cocks are open the actuating valve is closed, and no steam is supplied to the atomisers. The cylinder lubricator also supplies oil to the piston rod packing. A second lubricator supplies oil to the slidebars; both lubricators are driven from the outside camboxes of the valve gear.

Grease lubrication is provided for the axlebox guides, brake shaft bearings, firebox supports, bogie bolsters, hind truck pivot pin and pivot face. The grease nipples are all placed in easily accessible positions outside the frames. A feature, new to British Railways, has been introduced in the method of locking the big-end cotter on the inside connecting rod. This takes the form of a special serrated locking plate, the serrations being phased on both sides of the plate in such a way that four different positions of the serrations relative to the serrations on the back edge of the big end cotter can be obtained. This allows an adjustment of $\frac{1}{32}$ in. in the cotter position, and as the taper on the cotter is 1 in 16, a final adjustment of approximately .002 in. on the big-end bearing is obtained.

The coupled wheels are 6 ft. 2 in. dia. on tread, the tyres being shrunk on and secured by two small lips, one each side of the wheel centre rim, there are no separate securing ring, studs, or rivets. Built-up weights in the wheels balance the revolving parts only. Steam sanding is fitted to the front of all coupled wheels, and to the rear of the intermediate coupled wheels.



The inside connecting rod showing the serrated cotter for taking up big-end wear. This feature is new in British railways locomotive design

The bogie wheels are 3 ft. dia. on tread, and British Timken roller-bearing axleboxes of the non-split cannon type are fitted. The engine weight is carried by side bolster pads and laminated springs fitted in compensating beams. Side play control of the bogie is by means of double helical springs.

The hind truck wheels are 3 ft. $3\frac{1}{2}$ in. dia. on tread, and are fitted with British Timken roller bearings running in outside axleboxes. The engine weight is taken at three points on the truck frame, one being at the pivot centre of the hind truck, and the others by sliding bolster pads on the truck frame situated behind the centre line of the hind truck axle. Main bearing springs, and those controlling the side play of the hind truck are of the helical type.

Cab and Fittings

The cab structure is carried by cantilever supports hinged to the firebox backplate and by a diaphragm plate at the dragbox, permitting full freedom

for the cab to move with the boiler as expansion takes place. All boiler fittings and pipes are kept free from the main frames to avoid differential expansion and ensure freedom from fracture. Furthermore, the exhaust injector on the right-hand side, and the live steam injector on the left, are carried on brackets attached to the ashpan and foundation ring.

The driver's controls are grouped to give easy access and operation, the vacuum brake, sanding and blower valves being carried on a control column at the driver's right hand.

Draught screens are provided behind the driver's and fireman's seats, the driver's screen being extended to the cab roof and fitted with a fixed window. Leather upholstery is provided on the seats and back rests. Front cab windows are of the hinged type, and side windscreens are provided outside the cab.

The six-wheel tender has water and coal capacities of 4,725 gal. and 10 tons respectively. The wheels are 3 ft. 3½ in. dia. and the axles are fitted with British Timken roller-bearing axleboxes; wheel and axlebox assembly is identical with that of the pony truck. The design of the tank follows generally former L.M.S. practice, except that the side plates have a large radius at the bottom.

To provide a coal bunker of increased capacity, and of the self-trimming type, it has been necessary to eliminate the rear view windows for tender first working.

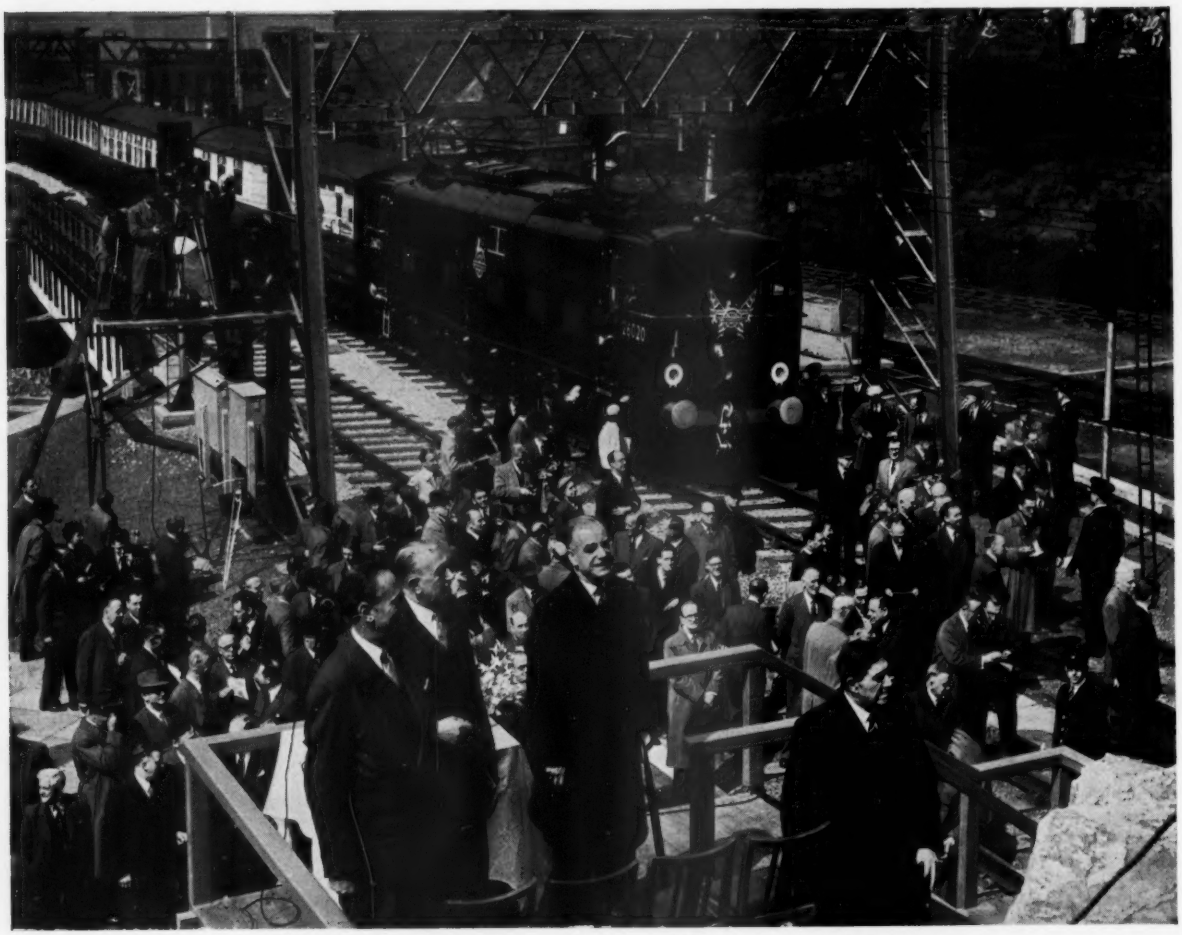
A steam operated coal pusher is provided and coal sprinkler gear fitted; the coal shovelling plate has drainage holes. Water pick-up gear is fitted.

Gangway doors of the double folding type are fitted to the tender, and are coupled to the engine cab by means of special hinge bars. Intermediate buffers are fitted to the tender. The engine and tender have steam brakes which can be worked in conjunction with the vacuum brake or independently, by means of a separate driver's valve.

The following is a list of the principal suppliers of equipment:—

Exhaust steam injector No. 11 Class K	Davies & Metcalfe Limited
Vacuum brake ejector ...	Gresham & Craven Limited
Driver's brake valve ...	" "
Graduable steam brake valve and associated details	" "
Roller-bearing axleboxes	British Timken Limited
Buffers	Geo. Turton, Platt & Co. Ltd.
Fibreglass insulating mattresses	W. Gilmour Smith & Co. Ltd.
Manually-operated blow-down valve	Everlasting Valve Co. Ltd.
Mechanical lubricators for cylinder lubrication and atomisers with check valves	The Gulf Oil Co. (Great Britain) Ltd.
Tri-tone chime whistle ...	Crosby Valve & Engineering Co. Ltd.
Multiple valve regulator ...	Superheater Co. Ltd.
Superheater header and elements	" "
Smith-Stone speed indicator	J. Stone & Co. (Deptford) Ltd.
British-Caprotti valve gear	Associated Locomotive Equipment Limited
United Kingdom metallic packing	The Railway Signal Company
Universal couplings ...	Hardy-Spicer & Co. Ltd.

Opening of the New Tunnel at Woodhead



On the dais (left to right), Mr. Alan Lennox-Boyd, Minister of Transport & Civil Aviation; Mr. J. W. Watkins, Chief Regional Manager, London Midland Region; Sir Brian Robertson, Chairman, B.T.C.; and Mr. C. K. Bird, Chief Regional Manager, Eastern Region, looking at the new tunnel entrance, before entering the inaugural train to proceed through the tunnel. (*See article on page* 671)

RAILWAY NEWS SECTION

PERSONAL

The Queen's Birthday Honours List

The following is a selection of honours of transport and industrial interest from the Queen's Birthday Honours List:—

K.B.E.

Sir Arthur Cecil Griffin, K.C.I.E., lately Chairman, Rhodesia Railways Board.

Mr. Ivan Arthur Rice Stedeford, Chairman & Managing Director, Tube Investments Limited.

Knights Bachelor

Colonel James Geoffrey Brydon Beazley, Chairman, Mersey Docks & Harbour Board.

Mr. Richard Rylandes Costain, Chairman & Joint Managing Director, Richard Costain Limited.

C.B.E.

Mr. Francis John Colvill, Engineer-Surveyor-in-Chief, Ministry of Transport & Civil Aviation.

Mr. John Sydney Rogers, Vice-Chairman, Ulster Transport Authority.

Mr. T. E. H. King, District Traffic Manager, Wellington, New Zealand Government Railways, who, as recorded in our June 4 issue, has retired, joined the railway service in 1914 as a clerical cadet at Christchurch. In 1922 he entered the District Traffic Manager's office at Christchurch, and, in 1938, was posted to the transport and train-running office at Greymouth. From 1940 to 1947 he performed similar duties at Dunedin. Appointed Train Running Officer in 1943, Mr. King was transferred to the Transportation Superintendent's office, Wellington, in 1947. He acted as Assistant Transportation Superintendent for periods during 1950 and 1951 and was promoted to Assistant District Traffic Manager at Wellington in February, 1952. In October of the same year he received his appointment to the position of District Traffic Manager, Wellington.

Mr. K. D. Croft, who, as recorded in our June 4 issue, has been appointed District Traffic Manager in charge of the Wellington railway traffic district, New Zealand Government Railways, joined the railways in 1917 as a clerical cadet at Christchurch. He later served in the staff division of the General Manager's office at Wellington, and transferred to the Auckland district in 1933. During the 1939-45 war, Mr. Croft was appointed organiser of the railway emergency precautions scheme in the Auckland district. In 1944 he became an audit inspector in the Chief Accountant's office and five years later returned to Auckland, where he was engaged on special duties in the District Traffic Manager's office.

Mr. Douglas Wellesley Ostle, District Road Motor Engineer, Manchester, London Midland Region, British Railways, who died on May 29, was the first Road Motor Engineer in the Manchester District, having taken up that appointment in 1921. Mr. Ostle first entered the railway service as a premium apprentice at Crewe in 1912 and served in the first world war as a captain in the Royal Army Service Corps.

Mr. J. N. Turner, B. Com. (Melb.), Chief Statistical Officer, Western Australian Government Railways, who, as recorded in our June 4 issue, has been appointed Comptroller of the Accounts & Audit Branch, is 51 years of age. He joined the service of the W. A. G. R. in April, 1949, in the capacity of Chief Statistical Officer, previous railway service being with the Victorian Government Railways which he joined in 1917. He matriculated at the Melbourne University and graduated as Bachelor of Commerce in 1938. He is a qualified accountant and cost accountant.

Mr. W. H. Nicholson, District Motive Power Superintendent, Eastleigh, Southern Region, British Railways, has been appointed District Motive Power Superintendent, Nine Elms District (located at Woking), with effect from June 14, 1954.

Mr. J. N. Turner

Appointed Comptroller, Accounts & Audit Branch, Western Australian Government Railways

Mr. N. V. Baldwin, M.I.E.E., has been appointed Managing Director of Brookhirst Igranic S.A. (Pty), Ltd., the South African subsidiary of the Electrical Division of the Metal Industries Group of Companies.

Wickman Limited announces that Mr. G. R. Marsh, who has been a Director of the company for fourteen years, has now been appointed Managing Director.

Mr. Harry Dean Edmondson, Technical Assistant, Bridge Section, Deepdene House, Dorking, Southern Region, British Railways, has been admitted as a Graduate Member of the Institution of Civil Engineers.

INSTITUTE OF TRAFFIC ADMINISTRATION

The following Centre officers have been elected for the 1954/55 season:

Birmingham Centre:—Mr. R. H. Addlesee, Chairman, Mr. W. H. Bennett, National Council Representative, Mr. J. S. Burdon, Hon. Secretary, Mr. M. Rourke, Hon. Assistant Secretary, Mr. K. J. P. Bowyer, Hon. Treasurer, Mr. D. M. Kirby, Press Officer.

London Centre:—Mr. T. J. D. Morris, Chairman, Mr. R. Sparrow, Deputy Chairman, Messrs. W. Hodgson and L. J. Cox, Vice Chairmen, Mr. W. F. Hill, National Council Representative, Mr. N. T. White, Hon. Secretary, Mr. D. W. Hicks, Hon. Treasurer.

Merseyside Centre:—Mr. T. H. Carey, Chairman, Mr. G. E. Patterson, Vice Chairman, Mr. H. E. Jones, Hon. Secretary, Mr. C. H. Keen, Hon. Treasurer, Mr. G. A. Higginson, Assistant Secretary and Press Officer.

Preston Centre:—Mr. T. Jackson, Chairman, Mr. W. A. Bracegirdle, Vice Chairman, Mr. J. Williams, National Council Representative, Mr. J. Williams, Hon. Secretary, Mr. C. Griffin, Hon. Treasurer, Mr. J. Thompson, Press Officer.

We regret to record the death on May 20, at the age of 56, of Mr. Benjamin Henry Hovey, Managing Director of Soag Machine Tools Limited and the Soag Machining Company.

Mr. J. W. Hutton, M.Inst.T., Chief Traffic Manager, Ulster Transport Authority, is to retire at the end of this year. Mr. Hutton commenced his career with the Northern Counties Committee of the Midland Railway, and later of the L.M.S.R., in 1910. During the 1914-18 war, he served with the North Irish Horse, and later with the Royal Ulster Rifles returning to N.C.C. service in 1919. He passed through the various departments and was appointed Secretary in 1941, and Manager in 1946. With the establishment of the Ulster Transport Authority in 1948, Mr. Hutton was appointed to his present position of Chief Traffic Manager,

XUM

Mr. J. W. Hutton
Chief Traffic Manager, U.T.A., who is retiring

Mr. H. S. Knott
Appointed Traffic Manager, Ulster Transport Authority

Mr. J. Royston
Appointed Divisional Operating Superintendent, Manchester, L.M. Region

responsible for rail and road operations and for all commercial matters connected with transport revenue, in addition to which he carried out the same functions in respect of the steamship services of the British Transport Commission as were previously carried out by him as Manager of the N.C.C.

Mr. Harold Stanley Knott, M.A., B.Com., M.Inst.T., Traffic Manager of the Great Northern Railway (Ireland), since 1944, and subsequently of the Great Northern Railway Board, has been appointed in addition Traffic Manager of the Ulster Transport Authority, and will succeed Mr. J. W. Hutton on his retirement. Mr. Knott was educated at Mountjoy School and Trinity College, Dublin. He graduated in 1930, receiving B.A. and B.Com. Degrees, and in 1944 his M.A. Degree. He entered the service of the former London Midland & Scottish Railway as a Traffic Apprentice in 1931 and, after extensive training in the traffic operating, locomotive running and commercial departments throughout that system in England and Wales, was appointed Assistant District Controller, Leicester, in 1938. At the end of that year he was sent by the L.M.S.R. to the New York Central System, where he spent a year studying American railway conditions and methods of operation. In 1939 he resumed duty with the L.M.S.R. as Assistant District Controller, Leicester, and, on being released for Army Service in July, 1940, was commissioned in the Royal Engineers (Transportation). He served until October, 1942, when he was specially released by the War Office to take up the appointment of Deputy Traffic Manager of the Great Northern Railway (Ireland). In 1944 he was appointed Traffic Manager, and also Traffic Manager of the former Belfast & County Down Railway; the latter position he held until 1948, when the B.C.D.R. was merged in the Ulster Transport Authority. As Traffic Manager of the G.N.R., Mr. Knott was responsible for the extensive bus and road freight services of that undertaking in the Republic of Ireland, as well as for the railway system. He has worked in close collaboration with the officers of the Ulster Transport Authority, and is Chairman of the Committee of Technical Officers appointed to report on the future of public transport in Northern Ireland. Mr. Knott was President of the Belfast Chamber of Trade in 1952-1953. He is a Member of Council of the Belfast Chamber of Commerce and Chairman of the Belfast Savings Committee.

Mr. J. Royston, A.M.Inst.T., Assistant Divisional Operating Superintendent (Western), Eastern Region, British Railways, who, as recorded in our June 4 issue, has been appointed Divisional Operating Superintendent, Manchester, London Midland Region, entered the service of the Great Northern Railway at Retford in 1918. After serving in the District Superintendent's office at Nottingham, he became a Traffic Apprentice in 1927. In 1930 he went to Grimsby Docks as Assistant Yardmaster and, in 1932, to Immingham as Yardmaster. He returned to Grimsby Docks as Yardmaster in 1934. In 1937 Mr. Royston was appointed Chief Signalling Inspector, Superintendent's Office, Western Section, Liverpool Street, from which position he transferred to Manchester in 1940 as Assistant District Superintendent, L.N.E.R., being appointed District Superintendent in 1945. He returned to Liverpool Street in 1948 as Assistant Operating Superintendent (Western), Eastern Region, and was redesignated Assistant Divisional Operating Superintendent (Western) in 1949, the position he now leaves for his present appointment.

Presentation to Mr. W. N. Pellow

Mr. W. N. Pellow, Motive Power Superintendent, Western Region, British Railways, being presented with a silver rose bowl by Mr. K. W. C. Grand, Chief Regional Manager, on the occasion of his retirement. (*See our issue of May* 14)

B.T.C. Passenger Charges Scheme, 1954

Evidence before Transport Tribunal concluded

The Transport Tribunal continued the hearing of evidence given by objectors to the application by the British Transport Commission to raise charges under the B.T.C. Passenger Charges Scheme, 1954, on June 1. Evidence given up to that date was summarised in our issue of June 4. There are nineteen objectors, including the London County Council.

Mr. Geoffrey Lawrence, Q.C., principal counsel for the L.C.C., recalled for cross-examination Sir Reginald Wilson, a Member of the British Transport Commission. Sir Reginald agreed that since the last fares inquiry in 1953, there had been increased costs which had fallen on the Commission as a whole. He said that there was no question of raising fares outside London and that a great many of the ordinary journeys undertaken on British Railways outside London were highly profitable to the Commission. Such journeys had been giving a more than reasonable contribution to central costs.

Mr. Geoffrey Rippon, representing the County Boroughs of East and West Ham and local authorities in South-West Essex, questioned Sir Reginald Wilson about the running costs of London Transport, and asked if he thought it was reasonable that there should be in London one supervisor to just under four vehicles, one supervisor to just under 16 drivers and conductors, and six and a half operating and maintenance staff to every vehicle.

Sir Reginald Wilson said that a director of one of the largest and most successful companies in the U.K. told him recently: "I will not say if you have a high ratio of supervisors that you are necessarily efficient, but unless you have a reasonably high ratio of supervisors to the others you will not be efficient."

Later Sir Reginald Wilson said the London Transport wages bill was 60 to 70 per cent of its total expenses. A typical territorial bus company's wages expenditure was probably little over 50 per cent of its total expenditure. That was not a sign of efficiency or inefficiency, but simply that they were going about their business in a different way.

Mr. Rippon asked whether he was satisfied the London figure, bearing in mind the different circumstances, was a right one. Sir Reginald Wilson said that the figures did not demonstrate any abnormal element of inefficiency.

A Fatal Step

On the following day Mr. H. G. R. Lambert, former general manager of the North-Western Road Car Company, Manchester, described the new fares structure as "a fatal step to take."

The lower fare stage provided the bulk of the revenue for London Transport. "I think it is a dreadful thing to put in fares that rise to twopence, fourpence, and then sixpence," he said.

Asked by Mr. George Mercer (for the L.C.C.) about fare increases in provincial areas, Mr. Lambert said: "They have been on a much more moderate scale. A halfpenny increase would be the basis for the bulk of them." His impression was that there was too great a supervisory staff in the London area.

Commenting on the statement that fares in London had risen only 94 per cent while costs had risen 140 per cent, Mr. Lambert said: "An observation of that sort is something of a red herring. There is no relationship between the percentage increase of costs and that of increases in the fares."

Fares in his former company were 24 per cent higher than pre-war fares, he said.

No Downward Trend

Mr. Stanley William Hill, an accountant, produced figures which, he said, showed that the number of passengers using London Transport was not decreasing and there was not a downward trend as had been claimed by the British Transport Commission.

Cross-examined by Mr. Harold Willis, Q.C., for the Transport Commission, Mr. Hill stated that he did not think that television was keeping people at home, and, therefore, off buses. It was a passing phase which wore off. Neither did he think that the increased number of private cars was affecting the number of passengers.

Mr. Frederick William Irons, a resident of Thurrock (Essex), said that the railway fares between Grays in Essex and London had increased from 3s. 9d. for a return in 1948 to 5s. 2d. today.

In closing the evidence on June 3, Mr. Geoffrey Lawrence, Q.C., said that the British Transport Commission's attitude was one that would suggest to any objector that he should "take off his shoes before daring to walk on the commission's ground." Their attitude was that it was almost impertinent to suggest that those who had the task of forming policy and making estimates could possibly be mistaken.

"It that is to be the attitude, I do not know why we are here at all," he said. In spite of the Commission's additional costs, there were ways and means by which the burden could be lifted and not placed on the travelling public of the London area.

Attitude of L.C.C.

The attitude of the London County Council to the B.T.C. application was criticised by Mr. Harold Willis, Q.C., at the final session of the public inquiry on June 4.

Mr. Willis, appearing for the Commission, said it was wrong to regard the Commission application as something intended to profit the Commission and penalise London. "The Commission are not making a case for increased fares to pay bigger dividends to shareholders," he said. "We do object, however, to a great body like the L.C.C., to which Londoners look for guidance in matters of this kind, stating publicly—before any enquiry was heard—by a resolution in its General Purposes Committee, that fares outside London will remain unaltered and the inequity already existing between fares inside and outside London will be increased."

Value of Goodwill

The Commission and the L.T.E. valued very highly the goodwill of the mass of Londoners who travelled on their services, and they could not help feeling that such an expression of view by the L.C.C. at that stage must have tended to mislead the public and to alienate that goodwill.

The Commission did not object to criticism. Fair and proper criticism were expected and indeed welcome. What they objected to were dogmatic statements that they were wrong, with no explanations as to why or in what respects.

Mr. Willis said that in the light of all the evidence which had been placed before the Tribunal, he considered that the case made out by the British Transport Commission was fully justified in all the circumstances.

The Tribunal's findings will be made known later. The hearing has lasted for ten days.

Ex L. & Y.R. Officers Association Luncheon

The third reunion luncheon of the ex-Lancashire & Yorkshire Railway Officers Association was held at the Constitutional Club, Northumberland Avenue, London, W.C.2, on May 28. Mr. T. W. Royle presided. Before taking their seats, members of the Association paid silent tribute to their late President, Sir Arthur Watson, and to the late Mr. J. K. Sidebottom and Mr. Percy Wharton.

Mr. H. W. Phillips, proposing the toast of the Association, said that because of its very constitution it must come to an end; he hoped that it would run its course and that all present would add to its success.

Reminiscences of the L. & Y.R.

Mr. T. W. Royle, replying, recounted many events in the history of the L. & Y.R., including mention of a proposal made in 1919 for abolishing lodging turns with a promise that the same efficiency would be maintained, and at no greater cost. The L. & Y.R. Company had promised its consideration and co-operation, but Mr. Royle said he had not heard of any concrete suggestions being made.

Mr. Royle pointed out that as the years went on it became harder for members to attend, but he asked those present to help gain the support of other members of the Association.

A brief agenda was dealt with, in which Mr. R. T. Taylor, a Director of the former L. & Y.R., was elected President.

Others present included:—

Messrs. F. S. Barnes, E. C. Bourne, S. T. Clayton, E. S. Hunt (guest), E. S. Cox, J. Fairclough, G. F. Horne, R. G. Hullah, F. Joseph, O. C. Ludwig

H. W. Moore, A. Howarth, A. Jones, G. H. Nutter, J. Neil

M. M. Parkes, R. S. Pedder, H. E. Roberts (Hon. Secretary), F. G. Umpleby, A. Wood, Ernest Wharton

NEW LOW HYDROGEN ELECTRODES.—A new and improved low hydrogen electrode known as Fortrex 35 has recently been developed by Murex Welding Processes, Limited. It is claimed to be simple to use in any position, smooth running and the slag easily removed. The electrode gives sound radiographs even in positional welds, and the weld deposit has high impact values at sub-zero temperatures. The Fortrex 35 electrode can be used for the welding of carbon and low-alloy steels normally outside the welding range, often without the need for preheating. The electrode is of the plain extruded type and is made in gauges Nos. 12-6 and in $\frac{1}{4}$ in. and $\frac{5}{16}$ in. sizes.

XUM

British Timken Limited

New £1,000,000 works begun; Mr. John Pascoe's review

Mr. John Pascoe, Chairman & Managing Director, at the annual general meeting of British Timken Limited, said:

In 1953 the group total sales were down by over 4 per cent on the previous year, and the profits of the group before tax and depreciation were £112,100 down, but as the provision for depreciation required £32,904 less, the profit before tax and after depreciation was £79,196 less than in the year 1952.

Because, however, of the varied incidence of all taxation on the various companies of the group, taxation absorbed £115,517 less, and the net profit was higher than that of 1952 by £36,321, at a figure of £540,595. The proportion earned and retained in subsidiary companies was £82,180, leaving the net profit of British Timken £458,415 against £438,603 for 1952, an increase of £19,812.

With the small decrease in turnover, and an increase in cost of wages and raw materials of approximately £170,000 over 1952, I think you will agree that our manufacturing efficiency and productivity has been fully maintained.

For the fourth year in succession, we recommend an increase in the ordinary dividend, proposing to pay 8 per cent on the 2,000,000 ordinary shares, against 10 per cent on the 1,200,000 ordinary shares existing at the end of 1952.

In 1953 Fischer Bearings Co. Ltd. declared a special bonus dividend of £150,000 free of tax out of its undistributed profits at December 31, 1952. In the parent company's accounts this was placed to general reserve. We decided to leave the dividend on loan to our subsidiary for development, and subsequently we obtained Treasury sanction to issue to British Timken Limited 150,000 £1 Ordinary shares in Fischer Bearings Co. Ltd., thus expunging the loan and increasing the capital permanently employed in that subsidiary.

Since December 31, 1952, we have purchased the freehold of our Duston property previously held on a long lease: this will be reflected in our next accounts by the transfer of approximately £498,000 from leasehold to freehold properties.

We are proceeding with our expansion programme and have begun a new factory on a 70-acre freehold site at Daventry for the production of larger sizes of tapered roller bearings.

Capital commitments of £550,000 shown in the accounts include £200,000 for this development, which will ultimately involve an expenditure of approximately £1,000,000.

In 1953 our direct exports reached the highest figure ever recorded, being 16 per cent of our total output. In addition it must be remembered that a great proportion of our ordinary turnover, in our estimate at least 60 per cent, goes into the export market.

Sales were made to seventy-one countries, and personal visits to over forty of these were made by your Directors and technical staff with very satisfactory results during 1953, which are continuing during the present year. Our direct exports are now running at a higher rate than ever before.

During the first five months of this year, demand has been very well maintained, and our output is running at a very satisfactory level, but our profit margins, in face of increased wage and material costs and intense competition all over the world, are showing a declining tendency. However, with our expanding capacity and extensive re-equipment, we are now able to quote much more satisfactory delivery dates, and providing there is no setback in general trade, we have good prospects of reaching a greater output than during any previous year.

The Chairman proposed a vote of thanks to the staff of British Timken Limited and Fischer Bearings Co. Ltd. They were a fine team who had constantly furthered the prestige of the companies in the engineering world. A great proportion of them had served the companies for twenty years or more.

Swiss Loan for French Electrification

Negotiations between Switzerland and France for the electrification of main lines in France connecting with the Swiss system were concluded early in May. It was agreed that Switzerland shall make to the French National Railways two loans to finance the electrification. The first loan, amounting to Swiss fr. 200,000,000 (approximately £16,669,000), is a long-term type loan with repayment over 26 years, and is to be granted by the Swiss Federal Railways, which in turn will obtain the funds required from the Confederation. The second loan, amounting to Swiss fr. 50,000,000 (approximately £4,166,660), bears interest at 4½ per cent and is redeemable within six years; it will be granted by a consortium of Swiss banks, and is mainly intended for the payment of orders for electric locomotives, electrification equipment, and so on to be placed by the French National Railways with the Swiss industry.

The following lines are to be electrified: Strasbourg-Colmar-Basle, Dijon-Frasne-Vallorbe, and Frasne-Les Verrières, totalling 196 route miles. A State convention between France and Switzerland covering all questions relating to these conversions and to the loans has also been concluded.

For the time being, the conversion of Dijon-Vallorbe main line will be limited to one track only. The capacity of the line will, nevertheless, be much increased.

The interest and redemption service of the loans is to be based on the funds accruing annually in favour of the French National Railways from the freight balance payable by the Swiss Federal Railways, as more freight traffic is carried by the French National Railways in respect of Switzerland.

From the Swiss point of view the two electrification schemes are of paramount importance, as by augmenting the capacity of these lines connecting with the Swiss railways the danger of traffic between the northern and southern Europe being diverted to routes not crossing Swiss territory, should be successfully countered. The same policy has also been the reason for the Swiss financial participation, decided about a year ago, in the cost of the electrification of the Karlsruhe-Basle main line.

EXPERIMENTAL THREE-DAY EXCURSION FARES.—On June 4 British Railways (Scottish Region) introduced experimental three-day excursion fares between certain stations in the area north and east of Perth and Dundee. The tickets are valid on the outward journey by train on Fridays after 3 p.m. and by any train on Saturdays; the return journey can be made by any train on Saturday, Sunday (where service is in operation), or Monday following the date of issue. Examples of the fares are: Aberdeen to Perth, 23s. 9d. first class (ordinary fare 39s. 6d.); Dundee to Montrose, 6s. third class (9s. 2d.); Inverness to Kyle of Lochalsh, 16s. 3d. third class (24s. 4d.), and Perth to Forfar, 6s. third class (9s. 8d.).

Royal Visit to Plymouth

H.R.H. Princess Margaret arriving at Plymouth North Road Station, Western Region, for the unveiling of the Naval War Memorial on May 20

Opening of Woodhead New Tunnel

Ceremony performed by the Minister of Transport completing £4,250,000 *project*

(Left to right) Mr. J. W. Watkins, Sir Brian Robertson and Mr. Alan Lennox-Boyd inspecting the commemorative tablet at the western portal of the tunnel

On June 3, Mr. Alan Lennox-Boyd, Minister of Transport & Civil Aviation, opened the new three-mile tunnel carrying the Manchester-Sheffield line under the Pennines between Woodhead and Dunford Bridge. The ceremony took place at Woodhead, at the western portal of the tunnel, which is adjacent to and replaces two single-line bores, dating from 1845 and 1852 respectively.

The former London & North Eastern Railway, was advised that a new double line tunnel was the most economical solution to what had become an increasingly difficult civil engineering and operating problem, and gained powers for the work in 1947. Sir William Halcrow & Partners were appointed consulting engineers and the contract was awarded to Balfour Beatty & Co. Ltd. The work, which began in 1948, soon after the Railway Executive had authorised it to proceed, has been carried out under the direction of Mr. J. I. Campbell, Civil Engineer, British Railways, Eastern Region, and formerly Civil Engineer, L.N.E.R. The tunnel, which has cost some £4,250,000, is now the responsibility of the London Midland Region by reason of regional boundary adjustment. It is equipped for electric working, which will begin on June 14, when all trains will be electrically-hauled between Manchester and Penistone.

Mr. J. W. Watkins, Chief Regional Manager, London Midland Region, introducing Mr. Lennox-Boyd, welcomed the presence of Sir William and Lady Halcrow, Mr. Hugh Balfour, the Chairman and members of the British Transport Commission, representatives of the Unions, and three members of Parliament.

First Major Tunnel of Century

Mr. Lennox-Boyd said that the new tunnel was the first major tunnel to be constructed in the United Kingdom this century. Railways had a future as important as their past, but modernisation of their equipment was essential. The money spent on the tunnel had been well spent—as a result, the potential freight capacity of the route would be increased 50 per cent. He expressed the thanks of the Government for the imagination, technical skill and perseverance of those who had carried through the project, and wished god-speed to all who would use the tunnel.

He then pressed a button, and a commemorative plaque was unveiled on the portal of the tunnel.

The guests then boarded a special train hauled by a Bo-Bo electric locomotive, which broke a tape stretched across the tunnel mouth and traversed the tunnel to Dunford Bridge.

A luncheon was held at the Royal Victoria Hotel, Sheffield. After the loyal toast had been proposed by Sir Brian Robertson, Chairman of the B.T.C., Mr. J. W. Watkins proposed that of "The Civil Engineers and Contractors." After explaining that the tunnel had had to be built because of the cost of keeping the old tunnels in good condition he said that it had been a hazardous work for the engineers; at one point a new 45 ft. length had to be constructed after a fall. Some 1,152 men had been engaged at the maximum at any one time.

The health side had been well looked after, but unfortunately six men had lost their lives during the boring of the new tunnel. The first tunnel claimed 26 men, however, and during the construction of the second 28 men died from cholera. The section was now able to carry more traffic and in much better conditions.

Mr. J. I. Campbell, who first responded, said that he was fortunate in having been so closely associated with the work throughout. He referred to Sir Ronald Matthews and Mr. J. C. L. Train, who were present, and recollected the early deliberations with them on the subject of Woodhead. He valued the spirit of reasonable compromise with local authorities and interests which there had been and said that the relations between the contractors and the engineers had always been good. He had happy recollections of the collaboration with Sir William Halcrow & Partners and Balfour Beatty & Co. Ltd. Mr. Campbell paid a tribute to the site staff. The behaviour of the rock had been unpredictable and they had put in 6,000 tons of steel ribbing to keep it stable. When the first tunnel at Woodhead was inspected, General Pasley, the inspecting officer, recommended a pilot engine in front of every train passing through, but happily neither Lt.-Colonel Wilson nor Brigadier Langley had made such a proviso in respect of the new tunnel when they had passed it. It was a sound structure which was being handed over to the London Midland Region.

Tribute to Workmen

Sir William Halcrow, who next replied, praised the part played by the physical efforts of the workmen, on whose exertions much still depended in spite of mechanisation. It was not his experience that rock was easier than soft ground for tunnelling. His firm had received wholehearted co-operation from the railway civil engineering staff.

Mr. Hugh Balfour, who also replied, regretted the unavoidable absence abroad of Sir Andrew MacTaggart, Chairman of Balfour Beatty & Co. Ltd. Tunnels, he said, probably revealed less of their construction than any other public work. He mentioned the anxieties of the foremen and said that one worry was the difficulty of getting men to stick the job out. There had fortunately been few accidents. The work, the most important to be executed by his firm in this country, had been carried out at a time of shortages, but suppliers and sub-contractors had been helpful. After paying a tribute to the builders of the first tunnels, he handed to Sir Brian Robertson for inclusion in the B.T.C. archives a letter from Charles Vignoles—engineer of the Sheffield, Ashton-under-Lyne & Manchester Railway before being succeeded by Joseph Locke—to the directors, in which the Woodhead Tunnel, hardly then begun, was termed "gigantic and extraordinary."

Mr. C. K. Bird, Chief Regional Manager, Eastern Region, proposed a vote of thanks to the Minister, and hoped that all the events which he attended would be as happy.

Mr. Lennox-Boyd, who said that he had asked the experts some tiresome questions, called the tunnel a most splendid enterprise. The associated Manchester-Sheffield-Wath electrification scheme was the first electrification in this country of such an extent devised primarily to speed freight movement. It was on freight movement that we all lived and prospered and freight rates were an important factor in our industrial competition. The progress of the electrification would be watched by all.

Mr. Peter Scott proposed the toast of "The prosperity of the British Transport Commission and the health and happiness of Sir Brian Robertson." He spoke appreciatively of the hospitality extended to guests by the Commission and of the care and foresight which had characterised the arrangements for the occasion.

Sir Brian Robertson replied that the Commission liked to offer hospitality. It also liked to preserve its traditions and he expressed thanks to Balfour Beatty & Co. Ltd. for presenting such an interesting document to the Commission.

XUM

Presentation of Ramsbottom Locomotive to B.T.C.

Ceremony at the Kynoch Works of I.C.I. Metals Division, Birmingham

An 0-4-0 saddle-tank locomotive, built by John Ramsbottom at Crewe in 1865, was presented to the British Transport Commission at a ceremony on June 4 at the Kynoch Works of the Imperial Chemical Industries Limited, Metals Division, Witton, Birmingham, where it has been in service since 1914.

Mr. C. E. Prosser, Chairman, Metals Division, I.C.I., welcomed the guests to the ceremony, and the locomotive then approached under its own steam. It was numbered 4 by I.C.I., but it has now been repainted in its original London & North Western Railway livery—green, lined in black and white—and with running number 1439.

Dr. James Taylor, Group Director, Metals and Nobel Divisions, I.C.I., formally handing over the locomotive, said that, despite some alterations, it still retained most of its original characteristics. It was in full working order, but had been replaced earlier this year by a diesel engine in the Kynoch Works.

Mr. R. C. Bond, Chief Officer (Mechanical Engineering), British Transport Commission, who accepted the locomotive on behalf of the B.T.C., expressed appreciation of the gift, and stressed that the ceremony also commemorated the long-standing good relationship between Imperial Chemical Industries and British Railways. I.C.I. No. 4 was to be preserved, for the present at any rate, at Crewe Works, its birthplace nearly ninety years ago. Mr. Bond concluded the proceedings by stepping on the footplate and driving the engine away.

Among those also present were:—

Messrs. J. H. Scholes, Curator of Historical Relics, British Transport Commission; J. F. Harrison, Mechanical & Electrical Engineer, British Railways, London Midland Region; J. B. Dunkley, District Passenger Superintendent, British Railways, London Midland and Western Regions; G. L. Miller, District Motive Power Superintendent, British Railways, London Midland Region; and D. S. M. Barrie, Public Relations & Publicity Department, B.T.C.

History of Locomotive

No. 1439 was completed in August, 1865; it was one of 36 0-4-0 tank locomotives built by Ramsbottom (Locomotive Superintendent of the L.N.W.R. from 1857 to 1871) for general shunting work. Before going to Kynoch Works, it had been rebuilt twice by the L.N.W.R. in 1887 and 1898 (when a Webb chimney and a cab were fitted), and at one time it worked in and around Liverpool Docks. It was bought by Kynoch Limited (predecessors of I.C.I. Metals Division) in 1919, having been on loan to them since 1914. Minor modifications made more recently include the fitting of larger buffers and Ross pop safety valves.

The engine retains many unmistakable features of the former Crewe practice; for example, the cast-iron wheel centres with I-section spokes (introduced by Ramsbottom on this class), the brake gear with wooden blocks, and the "drop-down" smokebox door on a horizontal hinge. Other noteworthy items are the original Ramsbottom design of double-heat regulator, and the cylindrical firebox. The boiler and firebox were renewed by W. G. Bagnall Limited, of Stafford, in 1935, but apart from strengthening to permit a working pressure of 160 lb. instead of the former 120 lb., the unit is identical with that installed by the L.N.W.R. The cylinders are of the original dimensions, 14 in. by 20 in., the wheels are 4 ft. 1 in. diameter, and the weight in working order is 23 tons.

Paddington Station Centenary

Mr. A. S. Quartermaine unveiling the plaque on No. 1 Platform on May 29, with Alderman S. Howard Crosse, Mayor of Paddington, Mr. K. W. C. Grand, Chief Regional Manager, and Mr. C. J. Rider, Public Relations & Publicity Officer, Western Region (see our issue of June 4)

Questions in Parliament

Nationalised Industries

Sir Waldron Smithers (Orpington—C.) on June 1 asked whether the Government would now alter their present policy whereby Ministers would not answer questions on the administration of the nationalised industries, and if Ministers would in future answer such questions.

The Prime Minister (Sir Winston Churchill) replied: I see no reason to depart from the present practice whereby Ministers are not expected to concern themselves with the day-to-day administration of the nationalised industries.

Railway Transport in Swaziland

The Rev. R. W. Sorensen (Leyton—Lab.) on June 3 asked the Under-Secretary of State for Commonwealth Relations, what arrangements had been made in respect of railway transport connecting Swaziland with the territory of the Union of South Africa, particularly in view of a probable expansion in the export of timber from Swaziland; and what restrictions existed regarding both passengers and freight passing between the Union and Swaziland, Basutoland and Bechuanaland.

Mr. J. G. Foster (Parliamentary Under Secretary of State for Commonwealth Relations) replied: The possibility of constructing a railway from Lothair into the Usutu Forests area of Swaziland has for some time been under examination in consultation with the Government of the Union of South Africa. Any extension beyond that is not at present contemplated. The Union transport services are freely available to passengers and freight from the High Commission Territories without any restrictions, other than the normal control of the movement of livestock and agricultural produce.

BIRMINGHAM NEW STREET CENTENARY CELEBRATIONS.—The London Midland Region held an exhibition of locomotives and coaching stock at Birmingham New Street Station on June 1, 2 and 3 to mark the centenary of the opening of the station. The exhibition, which was visited by 9,000 persons, was opened by the Lord Mayor of Birmingham, accompanied by the Lady Mayoress. Many businessmen of Birmingham and local railway officers attended the ceremony. The exhibits included the preserved locomotives *Hardwicke* and a Kirtley double-frame 2-4-0, the 4-6-2 locomotive *City of Birmingham*, and the saloons of Queen Adelaide and Queen Victoria. A driver, fireman and guard were dressed in costumes of the period, and the platform carried flags and bunting. A booklet on the history of New Street Station, produced by the Region, was on sale.

Contracts & Tenders

The British Transport Commission announces that as part of the £2,000,000 programme for the development of lightweight diesel trains on British Railways, an order has been placed with the Metropolitan-Cammell Carriage & Wagon Co. Ltd., Birmingham, for 36 motor vehicles and 36 driving trailers. These units will be fitted with A.E.C. engines, and with Wilson gearbox transmission made by Self-Changing Gears Limited, Coventry.

The first lightweight diesel train to be completed under the programme was demonstrated in the London area on April 29; public services will begin in the North Eastern Region on June 14 with units constructed at Derby Works.

Nuove Reggiane Off. Mech., of Reggio Emilia, is building a total of eleven electric locomotives of Class E.636 for the Italian State Railways. They are of the 3,000-volt d.c. Co-Co type, of 1,920 kW output and 100 tons weight.

The New Zealand Government Railways have placed an order with W. G. Bagnall Limited, of Stafford, for ten 240 h.p. 0-6-0 diesel-mechanical shunting locomotives. The locomotives will be fitted with M4AA6 type oil engines manufactured by the National Gas & Oil Engine Company, and the transmission will include a five-speed gearbox of Self-Changing Gears Limited design and a Fluidrive hydraulic coupling. In working order each locomotive will weigh 30 tons. A similar locomotive is in course of manufacture for the Tasman Pulp & Paper Company, New Zealand.

The contract is the first large order for the newly-designed range of Bagnall diesel mechanical shunters; the firm has not hitherto sold its products in New Zealand. Mr. W. A. Smyth, Managing Director, W. G. Bagnall Limited, flew to New Zealand and spent a week there studying the operating conditions and discussing the exacting requirements of the railway with the Chief Mechanical Engineer and his senior officers.

British Railways, London Midland Region, have placed the following contracts:—

Norris Warming Co., Ltd., Salford: provision of heating and hot water services at Reddish electric locomotive depot

Soil Mechanics Limited, London, S.W.3: bored piling to staff dining rooms and Hotels department buildings in connection with the reconstruction of Euston Station departure platforms

Edward Wood & Sons, Ltd., Derby: construction of office accommodation at Derby Locomotive Works.

John Laing & Son Ltd., Carlisle: for the renewal of engine shed roof, pits and pavings at Workington Motive Power Depot

According to the Special Register Information Service of the Export Services Branch of the Board of Trade the British Consulate General at Lourenço Marques has reported that the closing date of the call for tenders issued by the Directorate of Port, Railway & Transport Services has been postponed to June 17.

The Director-General of Supplies & Disposals, New Delhi, is inviting tenders for the following items:—

(*a*) 96 axleboxes (10 in. × 5 in. × 7½ in. × 1 in. groove)

(*b*) 219 axleboxes (10 in. × 5 in. × 7½ in. × 2⅛ in. groove)

(*c*) 987 brake pull rod safety loop double 1974 brake shaft hanger

(*d*) 3,948 brake blocks

(*e*) 160 drums rings piston valve

Tenders are to be submitted to the Director-General of Industries and Supplies, Shahjahan Road (Section SRI), New Delhi, quoting refs. (*a*) SRI/16297—E/I; (*b*) SRI/16152—E/I; (*c*) SRI/16183—E/II; (*d*) SRI/16184—E/II; (*e*) SRI/16018—E/II. They will be received up to 10 a.m. on (*a*) June 18; (*b*) June 25; (*c*) July 8; (*d*) July 8; (*e*) July 14.

Forms of tender are only available for purchase in India from: the Deputy Director-General (Supplies), Directorate General of Supplies & Disposals, New Delhi; Director of Supplies and Disposals, Bombay or Calcutta; Deputy Director of Supplies & Disposals, Madras.

If the date for the receipt of tenders does not allow sufficient time for tenderers to obtain tender forms from India, they may submit their quotation to India in their own letter form or by telegram so long as all essential particulars are given and provided they simultaneously apply for the tender forms and return them duly completed as quickly as possible on the basis of advance quotation already submitted.

A copy of the tender forms may be examined at the India Store Department, 32-44 Edgware Road, London, W.2, on application to the "CDN" branch. The drawings may be seen at the offices of Hodges Bennett & Company, 59-60 Petty France, London, S.W.1, from whom copies may be obtained, if required, at a fixed price per sheet.

According to the Special Register Information Service, Export Services Branch, Board of Trade, H.M. Consul at Tamsui, Formosa, has reported that a call for tenders (Invitation number 268) has been issued by the Central Trust of China, Agent for Council for United States Aid, for the supply of the following items:—

12 diesel engine and torque converters for railway diesel coaches

One two years supply of spare parts for above to be listed by bidder from manufacturer's maintenance experience

12 driving bogies

10 trailing bogies

One spare parts for both driving and trailing bogies, to be listed by bidder from manufacturer's maintenance experience

11 air brake systems for power coaches

11 air brake systems for trailer coaches

One spare parts for air brakes under above two to be listed by bidder from manufacturer's maintenance experience

46 coupler and draft gear units for power cars and trailers

The closing date for the receipt of tenders is 10.30 a.m. on July 5. Tenders should be addressed to the Central Trust of China, United States Aid Division, 96 Po Ai Road, Taipei, Taiwan (Formosa). Cable address: Trustusa, Taipei. It is important to note that to avoid disqualification, United Kingdom firms should ensure that offers are made in strict accordance with the specifications and terms stipulated in the invitation and thus do not contravene paragraph 6 of the conditions attached to the invitation; that offers are despatched to reach the Trust before the date fixed for opening tenders; that all quotations are made in U.S. dollars (quotations in sterling or other soft currencies cannot be considered); and that a firm price-quotation is submitted as bids quoting "prices ruling at time of delivery" are automatically disqualified.

United Kingdom firms who wish to tender must obtain the necessary documents direct from the Trust. If necessary they may submit their bids by cable or airmail, with an undertaking to forward their formal offer when the requested forms have been received. A copy of the specifications and conditions of tendering is available on loan to United Kingdom firms on application to the Export Services Branch (Lacon House, Theobald's Road, London, W.C.1).

According to the Special Register Information Service of the Board of Trade, Export Services Branch, the British Embassy at Lisbon has reported that the Directorate General of Overseas Development is calling for tenders for 180 km. of rails for the Mossamedes Railway and 120 km. of rails for the Congo Railway in Angola.

Tenders will be opened at 3 p.m. on July 20 at the offices of the Directorate, 13 Praça do Principe Real, Lisbon, and at the offices of the Administrative Commission of the Development Fund of the Province of Angola (CAFFA) at Luanda. The tender conditions and specifications may be inspected at the abovementioned offices.

A provisional deposit of Esc.1,000,000 (£12,500) must have been made with the Bank of Angola to the order of either the Directorate General of Overseas Development or the Administrative Commission of the Development Fund of Angola, up to the day before tenders are opened.

Judging from the amount of the provisional deposit the value of the contract for the supply of rails is about Esc. 40,000,000 (£500,000).

According to the Special Register Information Service of the Export Services Branch, Board of Trade, the United Kingdom Trade Commissioner at Karachi has reported that the Ministry of Communications (Railway Division), is calling for tenders, for the supply of 50 broad gauge dismantled bogie hopper ballast wagons, "Bob" type.

Tenders in sealed covers superscribed "TENDER FOR B.G. (5 ft. 6 in.) BOGIE HOPPER BALLAST WAGONS "BOB TYPE" must reach the office of the Director-General (Railways), Railway Division, Ministry of Communications, Room No. 302, 2nd Floor, Multi-Storeyed Building, Adj., Assembly Building, Kings Way, Karachi, Pakistan, not later than noon on July 26.

Tender documents including instructions to tenderers, Tender Form, Schedule of Requirements, General and Particular, Specifications and Conditions of Contract can be obtained from the office of the Director-General (Railways), Railway Division, Ministry of Communications, Room No. 342, 2nd Floor, Multi-Storeyed Building, Adj. Assembly Building, Kings Way, Karachi, on payment of Rs. 100 per set which amount will not be refunded under any circumstances.

Tenders will be accepted only on the specified Tender Form and Schedule enclosed with the tender documents. The successful tenderer will be required to execute an agreement before the commencement of supplies and will also be required to furnish a security deposit not exceeding five per cent of the value of the contract.

Notes and News

Locomotive Sales Engineer Required.—Applications are invited for the post of locomotive sales engineer. See Official Notices on page 675.

Draughtsmen Required.—Applications are invited for vacancies existing in the India Store Department, London, for one leading draughtsman (Engineering), one draughtsman (Engineering) and two drawing office assistants. See Official Notices on page 675.

Coventry Machine Tool Works Limited Results.—The directors of the Coventry Machine Tool Works Limited have recommended a dividend of 12½ per cent for the year 1953. This is the same as in the previous year. The consolidated net profit was £60,347 (£42,875) before deducting tax of £41,117 (£26,825). The sum of £767 (£2,540) was placed to reserve for tax on initial allowances and £85,342 (£73,754) was carried forward.

Scammell Lorries Limited.—Profits of Scammell Lorries Limited in 1953 were £520,124. After tax, £204,776 remained. The sum of £134,380 is allotted to general reserve and £71,786 is carried forward. The ordinary dividend for the year of 12½ per cent is increased by a 20 per cent scrip issue.

Vacuum Brake Co. Ltd.—The dividend declared by the Vacuum Brake Co. Ltd. for the year to January 31 last is 10 per cent. The net profit, subject to audit, is £72,851, compared with £80,201, before taxation of £48,000 (£79,000). The sum of £15,000 is transferred to general reserve and £13,804 is carried forward.

Wilnecote and Kingsbury Derailment.—In summarising, in our May 28 issue, Colonel W. P. Reed's report on the derailment between Wilnecote and Kingsbury on August 16, 1953, it is regretted that we did not in the second sentence appearing under the heading "Inspecting Officer's Conclusion" on page 614, convey accurately the sense of the actual wording in his report. This sentence should have read: "It was also clear that the wheel concerned was not an engine wheel, though derailments caused by hunting generally begin at the leading coupled wheels." Colonel Reed did not arrive at this conclusion from the mark on the rail, as our original sentence would be taken to convey, but from a consideration of other matters. The word "the" in the last sentence before the heading quoted above should have read "his own."

British Electrical Power Convention.—The sixth British Electrical Power Convention will meet at the Winter Gardens, Eastbourne, on June 14. Some 2,000 delegates are expected to attend. Papers covering a wide range of subjects will be presented during the week. The principal theme will be the development of home and overseas markets for electricity and electrical appliances. Delegates will meet under the presidency of Mr. J. R. Beard, who represents the Association of Consulting Engineers. The principal paper will be by Sir George Nelson, Chairman & Managing Director, The English Electric Co. Ltd., who will speak on electrical engineering in world trade. Associated with the Convention is the largest and most comprehensive electrical exhibition ever staged outside London. Exhibits by 100 firms and organisations will be housed in a mammoth marquee, covering 24,000 sq. ft. of the Winter Garden grounds. The exhibition, which will be reserved for delegates only on June 14 and 15, will be officially opened by the President on Monday night. On Wednesday, Thursday, and Friday the exhibition will be open to the public.

Disposal of Transport Units.—The Road Haulage Disposal Board and the British Transport Commission announced on June 1 that of units offered for sale in List R.2, advertised on April 7, 71, with 188 vehicles, are to be sold for the highest tenders submitted. All tenders for 29 units (95 vehicles) were rejected, and no bids were received for 14 units (65 vehicles). The units offered in this list were in all cases without premises.

B.T.C. Shipping Interest.—The British Transport Commission has acquired a controlling interest in the Atlantic Steam Navigation Co. Ltd., which operates transport ferry services between London and Continental ports, and between Preston and Larne, Northern Ireland. The company is stated to have been formed soon after the war with the purchase of three 4,290-ton tank-landing ships built for the Admiralty but never used in naval service. The Chairman of the company is Major-General G. S. Szlumper.

Cammell Laird & Co. Ltd. Results.—The net profit of Cammell Laird & Co. Ltd. for 1953, after providing for depreciation, debenture interest, and sinking fund, taxation and other charges, amounted to £659,266 compared with £655,227 in 1952. £220,000 profit applicable to previous years in now brought in, less tax, and with £184,693 brought forward from 1952 the total at the credit of the profit and loss account is £1,063,959. The interim dividend of 5 per cent absorbed £97,625. A final dividend of 10 per cent is recommended plus a four per cent tax free bonus.

The International Nickel Company of Canada, Limited.—The report of The International Nickel Company of Canada, Limited, and subsidiaries for the three months ended March 31, 1954, shows net earnings in terms of U.S. currency of $16,046,937 after all charges, depreciation, depletion, taxes, etc., equivalent after preferred dividends, to $1·06 per share on the common stock. In the three months ended December 31, 1953, net earnings were $12,441,846, equal to 82 cents a share on the common, and in the first quarter of 1953 net earnings were $15,590,551 or $1·03 a common share.

Metropolitan-Vickers Exhibits at Olympia.—A comprehensive range of industrial motors and control gear, including specialised types for use in steelworks and collieries, is exhibited at the Mechanical Handling Exhibition at Olympia by Metropolitan-Vickers Electrical Co. Ltd. The motors comprise type MDX, which are designed to conform with the 600 series of the American Association of Iron and Steel Engineers, whose standards are in common use in this country. Improvements have been embodied in the design, which include more h.p. per frame, better commutation, improved insulation and low armature inertia. Other exhibits include KN-B squirrel cage motors, a range of Perigrip brakes, and control gear, which includes a new flameproof contactor unit type MICU82 for underground installation for conveyors, and similar drives, type HCD30, direct-on contactor starter board, and a representative selection of standard control gear, contactor starter, hand-operated starter, photo-electric relay, and electronic timer.

British Railways Firefighting Competition.—The winners and runners-up in the finals of the British Railways Inter-Regional Firefighting Competition at Marylebone on June 1 were:—

Five-man trailer pump drill
Wolverton Works, London Midland Region (1 min 39½ sec.)
Darlington North Road Works, North Eastern Region (1 min. 40 sec.)
Three-man hydrant drill
Darlington North Road Works, North Eastern Region (1 min. 34 sec.)
Staveley & Barrow Hill, Motive Power Depot, Eastern Region (1 min. 34½ sec.)

Besides Sir Brian Robertson, Chairman of the British Transport Commission, those present included Mr. J. C. Train, General Sir Daril Watson, and Messrs. K. W. C. Grand, C. P. Hopkins, J. W. Watkins, and E. G. Marsden, and a number of other

Exceptional Load on the Eastern Region

Photo] ["*East Anglian Daily Times*"

Special out-of-gauge train for conveying a tower diffuser in sections from Ipswich Docks to Bury St. Edmunds (see our issue of June 4)

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 *inclusive or a woman aged* 18-59 *inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order,* 1952.

HIGH COMMISSIONER OF INDIA. Applications are invited for the posts of:— One Leading Draughtsman (Engineering), One Draughtsman (Engineering) and Two Drawing Office Assistants, to work in the Railway Inspection Branch, INDIA STORE DEPARTMENT, LONDON. The salary scales for the posts are as under:— £655 × 20—£725 × 20—£780; £420 × 20—£480 × 25—£670; £230 × 20—£290 × 25—£315 × 20—£375 × 25—£400, and apply equally to men or women candidates. The minimum in the Draughtsman's scale is tied to age 21 and in the Drawing Assistant's scale to age 18. Terms and conditions of appointment and standard forms of application may be obtained from "Co-ordination Branch" India Store Department, 32/44, Edgware Road, London, W.2. (Tel. AMBassador 4441/30.) The latest date for receipt of applications is June 28, 1954.

YOUNG ENGINEERS required for setting out, etc. Experience on railway work desirable but not essential. Must have completed National Service. Apply Eagre Construction Co. Ltd., East Common Lane, Scunthorpe.

NATIONAL COAL BOARD invite applications for a superannuable appointment as a Traction Engineer on the staff of their Production Department in London. The successful candidate will be required to undertake a wide range of traction work both on the surface and underground throughout the coalfields. Applicants must have good technical qualifications and experience in both electrical and diesel traction and must be capable of carrying out responsible work on projects, design, development and testing. Salary will be in the range £1,000 to £1,550 per annum according to qualifications and experience. Apply in writing, giving full particulars (in chronological order) of age, education, qualifications and experience (with dates) to National Coal Board, Establishments (Personnel), Hobart House, Grosvenor Place, London, S.W.1, marking envelope TT/790 Original testimonials should *NOT* be forwarded. Closing date July 12, 1954.

LOCOMOTIVE SALES ENGINEER. Age 30-40. Must have served apprenticeship and be fully trained as a locomotive engineer with technical qualifications—preferably Associate Membership of the Institution of Mechanical Engineers and/or Membership of the Institution of Locomotive Engineers—practical experience on an overseas railway is desirable especially the motive power department. An aptitude for technical publicity such as technical articles, advertising and printing is desirable. This post requires a man of personality and resource and is progressive leading to negotiations with railway authorities. This is a permanent post in an organisation of the highest reputation. Salary in accordance with qualifications but minimum of £1,000 p.a. Pension scheme. Applicants are requested to state in confidence their qualifications and experience under the above heads. Reply Box 258, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25*s.* per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press, Limited, 33, Tothill Street, London, S.W.1.

chief officials of the British Transport Commission and the Regions of British Railways. Among the visitors was Lt.-Colonel McMullen, Inspecting Officer of Railways, Ministry of Transport.

Aluminium Development Association.—At the annual general meeting of the Aluminium Development Association held on April 23, Mr. R. D. Hamer, the retiring President, presided and introduced the report for 1953. The report showed good progress with the three-year programme of research and development work begun in 1952, with particular emphasis on structural, marine and electrical engineering. During the year part of the Association Research activities culminated in the publication of nine new research reports. There was also a continuation in the trend of educational services with a considerable increase in the use made of them by educational authorities and indivdual teachers. The demand on the Association's technical services increased in practically every direction—over 150,000 copies of new or revised publications were despatched (compared with 131,000 in 1952) and over 430 film shows were given; present library resources included 1,300 literature accessions, 6,300 photographs and more than 2,000 lantern slides.

British Insulated Callender's Cables Limited.—At the annual general meeting of British Insulated Callender's Cables Limited, Sir Alexander Roger, Chairman, who presided, said in his statement that the drop in 1953 trading profit of £1,178,002 to £8,344,174 was not unexpected, and the results, which were more in line with those of 1951, 1952 having been an exceptionally favourable trading year, were considered satisfactory. The fall in trading profit had been more than offset by the decreased charge for taxation and the increased special receipts, leaving net available profit for the year £533,901 higher, at £3,998,336. The Chairman referred to the growth of competition on overseas markets, particularly from the Continent and Japan. Sometimes the prices quoted against them left them in no doubt that their competitors were determined to buy themselves into markets, or were being subsidised, or both. The use of carrier telephony for railway communication was growing, and they had received an order from the New South Wales Railways for over 50 miles of such cable. Work on the Lithgow electrification in that State was resumed. The days of long order books, continued the Chairman, were over, and they were back to the pre-war position in many of their products, with delivery and price becoming of increasing importance. After the meeting Sir Alexander Roger resigned as Chairman and Director after 36 years of service with the company. His successor in the chair is Mr. W. H. McFadzean.

Derwent Valley Light Railway Results.—The gross receipts of the Derwent Valley Light Railway for the year ended December 31, 1953, amounted to £23,578, against £23,696 in 1952. Expenditure was £17,929 (£17,631). Miscellaneous receipts were higher at £2,343 (£1,954), and the net revenue for the year was £7,992 (£8,019). After adding the balance brought forward of £2,754 to the net revenue and deducting debenture interest paid and provision for taxation, £8,591 is available, and the directors recommend that a 5 per cent dividend should be paid on both preference and ordinary stock, absorbing £4,050. Further recommendations are that £1,604 should be placed to general reserve and £2,937 carried forward.

Station Signs at Twickenham.—The new station at Twickenham, Southern Region, to which reference was made in *The Railway Gazette* of April 2, was illustrated on page 498 of our April 30 issue; one of the photographs reproduced showed the platform and the exterior of the waiting room, with lighting fittings and station name signs. In a letter published in our issue of May 7, a correspondent, referring to the many station name signs, wondered "how passengers are expected to locate the usual platform amenities such as waiting room and lavatories," adding that "this is station name signing gone mad." British Railways, Southern Region, have pointed out that when the pictures in question were taken, the signing had not been completed. The accompanying illustration shows the indicating signs now erected, which are perfectly clear and easily visible.

Babcock & Wilcox Limited Results.—A final ordinary dividend of 7 per cent is announced for 1953 by Babcock & Wilcox Limited. The ordinary capital now stands at £7,524,398 having been increased by £2,508,133 capitalised from reserves. An interim dividend of 7½ per cent was paid on the smaller capital and the total distribution for the year equals that for 1952 when a bonus of 3 per cent was added to a final dividend of 7½ per cent. Group profits for the year were £4,149,618

Completed signs at Twickenham Station, Southern Region, showing clarity of all indications

(£4,605,018). This excludes two foreign subsidiaries not consolidated but includes investment income of £76,871 (£96,199). Additional depreciation was £577,148 (£576,809) and debenture interest £33,241 (nil). Taxation absorbed £2,612,415 (£3,259,320).

British Timken Limited.—The net current assets of British Timken Limited expanded during last year from £2,441,862 to £2,552,802. Stocks were reduced from £2,216,772 to £2,014,056, with the cash holding doubled at £761,462. The group net profit expanded from £504,274, to £540,595. The eight per cent dividend on the ordinary stock compares with 10 per cent in 1952.

Unilever Limited & N.V. Groups Results.—The report of the directors of Unilever & N.V. Groups for the year 1953 show that the turnover was £1,300,000,000, the largest yet attained. Trading revenue at £61,652,000 compared with £38,921,000 for 1952 was also a record. Taxation for the year was £33,860,000 (£22,180,000), and consolidated net profit was £25,824,000 (£21,056,000, including £1,868,000 from reserves and £4,918,000 exceptional and non-recurring profits). Final ordinary dividends of 9¾ per cent for Unilever Limited and 8¾ per cent for Unilever N.V. are proposed, making the total dividends 15¾ per cent and 14 per cent respectively for the year (13½ per cent and 12 per cent). Profits retained amount to £18,019,000 (£13,987,000).

Assistance to Snowbound Villages.—At an inquiry held recently at Derby into a proposal to close the Uttoxeter-Buxton line to passenger traffic, villages in the Peak District National Park who live near the line were assured that, in the event of roads being blocked by snow, everything possible would be done to run emergency train services to link them with the outside world. Among objectors to the proposal, which was being considered by a sub-committee of the Transport Users' Consultative Committee, were the Borough of Buxton and the Ashbourne Urban and Rural Councils. Objections were received from Alstonfield, which was so isolated in the winter of 1946 that food had to be dropped by parachute. Mr. C. P. Millard, on behalf of British Railways, said that £16,000 a year could be saved by closing the line. The average number of passengers on existing trains was only 19.

New Wickman Administrative Offices.—The new office block at the Wickman Banner Lane Factory, built as a result of the destruction by fire of the previously existing accommodation in March, 1952, has now been completed. It is of reinforced concrete construction throughout, and provides 35,000 sq. ft. accommodation on two floors, and is located in the grounds in front of the existing factory building, with a southerly aspect to the front elevation. Ply-glass panels are fitted to the upper casements of all windows on the southern elevation, to extract the heat rays from direct sunlight, the lower windows being fitted with venetian blinds. The Frenger system of heating has been adopted throughout, heat being radiated from the ceiling downward through perforated ceiling panels. Expansion in the company's activities since the fire has necessitated acquisition of yet additional permanent accommodation. Wickman Limited announces that the premises at Fletchamstead Highway, Coventry, used as temporary administrative headquarters during rehabilitation, have been retained as permanent headquarters for the Factored Machine Tool Division, whence the sales promotion and servicing for the range of British and imported machine tools handled by the company on an agency basis will in future be conducted. A demonstration hall is being built, where Principals machine tools may be demonstrated under power.

The British Oxygen Co. Ltd.—At the annual general meeting of the British Oxygen Co. Ltd. held on May 13, Mr. J. S. Hutchison, the Chairman, presided. He said that the consolidated profit of £4,324,975, showed an increase of £349,883. The increase came from expended sales of industrial gases in Britain, and from improved overseas business. The group's expenditure on factories, machines and equipment had been £19,000,000 in the past five years. Their forward planning and laying down in Britain of large additional oxygen production plants had been no more than sufficient to enable them to meet the demands made on them. They were experiencing a rapid change of emphasis towards larger supplies of oxygen which introduced important factors in regard to heavy expenditure on production plants or changes in the method of supply.

Forthcoming Meetings

June 11 (*Fri.*).—Railway Club, at 82, Fetter Lane, E.C.4, at 7 p.m. Paper entitled "The Talyllyn Railway," by Mr. T. W. Robertson.

Until September 25 (*Sat.*).—"Popular Carriage" Exhibition (Two centuries of carriage design for road and rail) in the Shareholders' Meeting Room, Euston Station, London, N.W.1. Weekdays 10 a.m. to 7 p.m.; Sundays 2 to 7 p.m.

Railway Stock Market

There has again been a substantial business in stock markets, where sentiment benefited from the view that the bank rate is likely to remain at 3 per cent for some while. This assumption has arisen from the belief that the Treasury would not make a big issue of 2 per cent Conversion stock if an early return to a 3½ per cent bank rate were considered probable. On the other hand, it is realised that there is little ground for expecting a further reduction in the bank rate to 2½ per cent. The bank rate is a flexible instrument which can of course be adjusted quickly to meet changing conditions, but the City view is that the outlook is set fair for the present. In fact, the prevailing belief is that over the next few months, stock markets are likely to move still higher. Investors are not selling despite the substantial gains in share values in recent months, so if demand persists, it can be expected that markets would respond strongly. In the circumstances, it seems that if sentiment had the stimulus of a really hopeful turn in international political affairs, boom-like markets might develop on the Stock Exchange.

There was rather more business this week in foreign rails. A good feature was strong demand for Canadian Pacifics, which jumped from $45¼ to $49⅛, their highest so far touched this year. Talk of uranium discoveries on the company's property brought in buyers. Buying was also due to that attractions of the 5½ per cent yield, which is well above the yield on Hudson's Bay shares. There is a tendency to argue that Canadian Pacifics offer as promising a means of taking an interest in the future development and prosperity of Canada as Hudson's Bay shares. Canadian Pacific 4 per cent preference stock has strengthened to £67¼ at which the yield is not far short of 6 per cent. Dividend on the latter stock is non-cumulative, but it is of course well covered, and the yield is certainly attractive. Canadian Pacific 4 per cent debentures were firm at £89¼. White Pass no par value shares were less active around $26¼.

Antofagasta prference stock at 42½ continued to attract rather more attention, but the ordinary stock at 8⅜ encountered a little selling. Eventually all the remaining arrears of dividend on the preference stock will be cleared, so it is argued that, taking the long view, this stock can be regarded as well undervalued at its current level. Manila stocks remained steady with the "A" and "B" debentures at 144 and 137 respectively, the preference shares 67¼ and the 1s. ordinary shares 9s.

United of Havana stocks also continued firmly held on expectations that the eventual total of liquidation payments will be over current market prices of 43 for the second income stock and 6⅝ for the consolidated stock.

Nitrate Rails shares have strengthened to 21s. San Paulo ordinary units were 3s. 4½d. and Mexican Cantral "A" debentures 70½. Brazil Railway bonds held their rise, and changed hands around 8½. Ex Dorada Railway ordinary stock has changed hands down to 72. Guayaquil & Quito first bonds marked 51, Chilian Northern 5 per cent debentures 26½ and Paraguay Central prior Lien debentures 19. Taltal Railway shares changed hands at 13s. 10½d. Among Australian stocks, Emu Bay 5 per cent debentures were 33 and the 4½ per cent debentures 63. Midland Railway of Western Australia income debentures have been dealt in at 41. Nyasaland Railways 3½ per cent debentures transferred at 80 and the shares at 4s. 2¼d.

Road transport shares remained firmly held with Southdown firm at 32s., West Riding 32s. 3d. xd. and Lancashire Transport 52s. 6d. There was a sharp rise in B.E.T. "A" 5s. units, but at 48s. best levels were not fully held, although the market is confidently expecting an increase in the dividend.

Engineering and kindred shares displayed more activity with Vickers rising further to 64s. 9d. while Guest Keen have been active around 57s. 9d. in the belief that the acquisition of the group's former steel interests will not necessitate raising more capital. Ruston & Hornsby rose sharply to 55s. 3d. on higher dividend expectations. T. W. Ward were active at 49s. "ex" the share bonus, but elsewhere, Tube Investments at 68s. 6d. lost part of an earlier rise. British Timken were more active around 48s. 3d.

Among shares of locomotive builders and engineers, Birmingham Carriage were 26s. 9d., Hurst Nelson 42s. and North British Locomotive 16s. Beyer Peacock were up to 40s. with Vulcan Foundry 24s. 4½d., Wagon Repairs 5s. shares 13s. 4½d., Gloucester Wagon 10s. shares 17s. 6d. and Charles Roberts 5s. shares 9s. 7½d.